

# MINNESOTA MEDICINE

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association,  
Northern Minnesota Medical Association and Minneapolis Surgical Society.*

Vol. X

APRIL, 1927

No. 4

## CANCER OF THE RECTUM\*

ROBERT C. COFFEY, M.D.  
*Portland, Oregon*

Members of the Minneapolis Surgical Society: I consider it a very great privilege to have been asked to stop off incidentally and talk to you this evening. To comprehensively study cancer in a particular location one must have an understanding of the general principles of treatment and behavior of cancer wherever found. The subject of cancer is important because so many of us are going to die of it. I believe it is said that one out of every thirteen men and one out of every nine women, reaching forty years of age, will die of cancer. Fifty per cent of all cancers are of the gastrointestinal tract. Twelve per cent of all cancers are cancers of the rectum. Thirty per cent of all cancers involve the stomach. The question of cancer is being much discussed now and the treatment of it varies a great deal. I know of nothing particularly new on the subject although there are those who would have us believe there are new and startling things. There is a wave now, as there has been at many times in the past, in the belief that cancer is a germ disease. Yet, there is now no more scientific evidence nor more enthusiasm so far as I know than there was thirty-five or forty years ago. My own opinion of it is that it would not make any great difference so far as the treatment is concerned. Such a discovery might lead to a diagnostic test analogous to the Wassermann test for syphilis, or, knowing the source, we might learn to avoid it to an extent. Certain individual who are forward-looking and seek to protect their pocket books in old age are bringing forth various serums for the treatment and prevention of cancer. We are liable to be deceived on that point if we fail to study some of the underlying principles.

There has been no disease in which an efficient serum, either as a preventive or curative agent,

has been developed except in such diseases as produce immunity by an attack of the disease in question, as far as I have been able to learn. The germ of tuberculosis was discovered about 1882. Tuberculin was developed and was hailed as a great cure and yet tuberculosis has not been cured, nor will tuberculin prevent tuberculosis. We have known the spirochete of syphilis for twenty-five years or more. We have remedies for the disease but nothing to prevent it. Although tuberculosis and syphilis tend to produce immunity, cancer has very little tendency to produce immunity. I have seen only one case in all the cases I have observed that showed any tendency to produce immunity or cure itself after an operation and after recurrence. And even in this case the patient died of cancer in the end. The discussion of a curative or preventive serum, and more particularly the use of these various serums, is doing great harm to the cancer patient. There are thousands of people who are dying annually of cancer, as a result of misinformation.

The first and most important thing in connection with the treatment of cancer is to see it when it is curable.\* This is the only chance we have to do much for the cancer patient. To do this, we as surgeons must first educate the doctors and they in turn must educate the laymen. I think cancer is more or less a muddle in the minds of the people. You can talk to people about it and they don't really know what you mean. It is up to us to get some kind of a clear terminology to the people so that they can understand it and then they will know that these various irregular agencies are not going to cure them. One of the illustrations that I very often use in talking to patients is that of an unusual plant which may come up in a farmer's field. The farmer is not sure just what the plant is, is undecided as to whether he shall destroy it or wait and see what it is. Finally he destroys the plant and with it all its potentialities as a future pest in that community. But suppose on the other hand he neglects to destroy it. The plant blossoms, its seeds ripen and scatter in the im-

\*Read before the Minneapolis Surgical Society, Minneapolis, Oct. 13, 1926.

mediate vicinity and next year there may be a thousand or more plants. He looks them over and sees them multiplying. He becomes suspicious and decides to take them all up and destroy them. His potential pest is thereby obliterated. But suppose he ignores the weeds instead and harvests them with his hay. Some of the seeds fall in the field, others by the roadside, others are carried away in remote places by birds and mice. It becomes a pest and a menace to the community, for he now will certainly not take time to seek out all these weeds and destroy them and after another year the pest is firmly established and the case is hopeless.

A patient asks: "What is cancer? What is the difference between cancer and a tumor?" A simple answer is: "A cancer is a lump or mass of nonfunctioning cells which have the power of growing and reproducing themselves after being transplanted to another part of the body. A tumor has not the power to grow and reproduce itself in a distant part of the body after being transplanted." A patient comes with cancer of the breast and you advise immediate operation. The patient counters with some such argument as that her sister is coming up in two or three months and she would like to wait until her sister gets here before she is operated upon. What kind of an argument are you going to make in this case? You may use the above homely illustration applied as follows:

In the body there are certain vessels carrying blood to every part of the body for nutrition. Coming away from every part of the body are lymph vessels which pick up and carry away unused and superfluous materials and empty them into the blood stream which circulates throughout the body and carries them to the eliminative organs such as kidney, liver, etc. In the course of these lymph vessels there are certain filters such as you might put in the waste pipe of a kitchen sink to catch any coarse substance that might block the sewer pipe or otherwise do harm. These filters are known as lymphatic glands. In the growth of cancer some cells are detached and are carried along the lymphatic vessels to the filters. These filters effectively detain detached cancer cells in the course of their journey toward the blood stream. Here in this gland or filter the cancer cell multiplies and forms another cancer. From this new point or cancer another cell may become detached and

float on down to another filter or gland where it may be caught and multiply, forming a third cancer from which still another cell may be detached and float directly into the blood stream. The case is then hopeless for the cell will now lodge at some internal point where the blood vessels are too small to allow the passage of the cancer cell which in its new location starts a new growth out of reach of any form of treatment such as in the bones, the lungs, the liver, the kidneys, the brain, etc. It must at once be apparent that I am not speaking for the instruction of doctors on the cancer question. I am simply bringing forward an illustrative method of reaching the public and I am sure that if the public knew these simple facts, the mortality of cancer would be brought much lower than it is at the present time, for a patient who has this meagre amount of knowledge clearly inculcated may at once be made to realize the following points:

1. Cancer if it is discovered before a single cell has been detached from the original growth is curable by any destructive agencies whatsoever, whether the agency be the knife, the electric cautery, a simple hot iron, a caustic paste or what not.

2. If a single cell has been detached from the original growth and has traversed the lymphatic vessels to a lymphatic gland or filter located at a distance, the simple destruction of the original growth by any agency whatsoever, be that agency the knife, electric cautery, the cautery iron, or caustic paste, accomplishes nothing, for the cell which has lodged in the remote gland or filter is now engaged in the formation of a new cancer made up of exactly the same kind of cells as the original cancer and will destroy the patient's life just as soon as if the original cancer had not been destroyed.

3. If the original cancer and the lymphatic gland, including the one and only cell which has escaped, be removed by surgical measures, the patient will still be cured even though the operation may not be thorough.

4. But, if the surgeon lacks boldness or knowledge of the glands through which the cancer cells must travel to reach the blood stream, he may miss the one gland or filter which contains the one detached cancer cell. Thereby the patient's life is lost. The operation is a failure because it was poorly performed.

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important for a patient who has cancer to seek a thorough surgeon who is bold and well informed as to the method of spread of cancer.

6. If a single cell has escaped through the last intervening filter or lymphatic gland into the blood stream, the case is hopeless and no treatment whatsoever will greatly retard the fatal termination.

7. Inasmuch as there is no known method of determining whether a detached cancer cell has been lodged in the lymphatic glands or filters or when a cancer cell has escaped through these filters and into the blood stream, it is apparent that cancer must at once be classified as an emergency, for the time required for the passage of a cancer cell from the removable part of the lymphatic system into the blood stream may be very short. Indeed, it is possible the time intervening between curability and incurability may be measured in hours or even minutes.

8. Cancer is essentially a surgical disease and all agencies for the treatment of cancer should be in the hands and under the direction of the surgeon. For while the surgeon may not be technically skilled personally in such agencies as radiotherapy, he knows the mode of extension and the probabilities of cancer as well as possessing a thorough knowledge of the anatomy bordering on the areas to be treated. I think it is always well for the laity to know that the cancer cell is not a foreign body but that it is an embryonic or immature cell which has not yet developed to the stage where it can be used in the definite construction of the organs or the tissues of the body and is, therefore, not yet subject to the laws governing the coördination of cells in the body. It may, therefore, be classed as a lawless cell, although it so resembles the normal cells or tissues in which the growth has developed that only a very expert pathologist can tell the mature from the immature cell. McCarthy's study in the differentiation of cancer cells followed by the classification of cancer into types by Broders, constitutes the most important contribution which has been made on the cancer question in recent years. Broders found that in Class I, in which 25 per cent of the cells were embryonic and undifferentiated, 92 per cent of good results were obtained; in Class II, with 50 per cent of embryonic cells, 62 per cent of good results; in Class III, with 75 per cent of embryonic cells, 25 per cent of good results; in

Class IV, with 100 per cent of embryonic cells, 10 per cent of good results were obtained. The Mayo Clinic, working on this basis, has shown why certain cancers should be treated with radiotherapy while others do best with surgery.

While this typing of cancer is most important in arriving at a correct relative prognosis in cancer at a given location, another and possibly more important consideration, taken from the purely surgical standpoint, is the question of the location of the cancer regardless of the type. From this latter standpoint the most important question is whether or not the obstructing lymphatics or filters in the course of lymphatic vessels draining a given cancer area are so located that they can be removed by radical operation. For instance, we know what a forlorn hope is removal of cancer of the stomach as compared with cancer located at certain other points. In cancer of the tongue the lymphatic filters are deep and inaccessible while in cancer of the lip the lymphatics are easily accessible and may be removed early. In lip cancer approximately 80 per cent of the cases are curable if operated upon early while in cancer of the tongue a cure is rare. Cancer of the breast furnishes possibly the most interesting field for study of the possibilities of cure of cancer. More than thirty years ago Halstead, Willy Meyer and others recommended the radical removal not only of the breast, but the overlying skin, the pectoral muscles, fascia and all the lymphatics up to the clavicle and around the axillary vessels, thus marking an epoch in cancer surgery in establishing the principle previously referred to in this paper, viz.: The one essential in the surgical cure of cancer is the radical removal not only of the primary growth, but likewise the lymphatic glands and vessels intervening between the growth and their entrance into the blood stream. Surgical curability of cancer depends chiefly upon this one point.

Until recent years cancer of the rectum was considered by many as not a hopeful field for surgery, first because of its almost prohibitive mortality and second because it almost always returned, in contrast to cancer of the sigmoid, which offered one of the most hopeful fields for cancer surgery. As a matter of fact, it has been stated that postmortem findings reveal the surprising fact that 60 per cent of patients with carcinoma of the sigmoid die from obstruction be-

fore any metastasis occurs. Surgery for cancer of the sigmoid and cecum is very favorable for the reason that the intervening or filter lymphatics can be easily removed by surgical measures. My work in surgery for cancer of the rectum dates back for more than twenty years. I was early impressed with the brilliant team work done by the two Mayos doing a combined abdominal and perineal operation, both working at the same time. I also was impressed by the fact that they had reduced the death rate in this radical operation in one stage to 25 per cent mortality with a certain number of three year cures. Soon the two stage operation came in. The mortality was materially reduced. After the mortality was reduced, the operability increased. The more severe cases were taken on and the mortality rate again arose in accordance. But the one thing which impressed me was that by the operation we were doing in the earlier days, the patient finally succumbed to cancer. It had been my experience that hemorrhage and sepsis were the two principal causes of operative mortality. A two stage operation had already been adopted by various surgeons, particularly recommended by the Mayos. Their procedure was to make a simple colostomy, then at a second operation a posterior resection was done after removing the coccyx and a portion of the sacrum.

I followed this plan for a number of years, this being the best thing we knew. Practically all the operative deaths came with the second operation from shock due to hemorrhage or to sepsis or a combination of both, for in this operation we not only opened up large connective tissue spaces, but also the peritoneal cavity. It also occurred to me that in this operation it was impossible to remove the upper lymphatics in the mesosigmoid; therefore, I deliberately planned a two stage operation in which most of the work was done at the first operation, for by this plan it was possible to remove not only the mesosigmoid but all the gland-bearing connective tissue in the hollow of the sacrum, under direct vision. By ligating and cutting the superior hemorrhoidal artery as it crossed the promontory of the sacrum, all the danger of hemorrhage was at once relieved. In this connection it is well to recall that in the first four operated upon by this method, both internal iliacs were also ligated. One of these developed such an extensive phlebitis in all the pelvic veins that I abandoned the

ligation of the iliacs and depended entirely upon ligation of the superior hemorrhoidal. However, it is interesting to note that two of the four in which the internal iliacs were ligated at the time of the first operation, lived more than twelve years after operation and died without recurrence, and the one who had the severe phlebitis is still living, thirteen years after the operation, in perfect health at the age of seventy-six. After abandoning the ligation of the internal iliacs, four additional operations were performed prior to the publication of the original technic in the *Annals of Surgery*, April 1925. In this technic the principal features were the large incision through the right rectus muscle; thorough examination of the liver and all the retroperitoneal space as well as the immediate neighborhood of the growth for possible metastasis which would make the case inoperable; mobilization of the sigmoid by cutting the peritoneum of the mesosigmoid and double ligation of the superior hemorrhoidal artery; permanent colostomy through the left rectus muscle using the proximal sigmoid; removal of the fat in the hollow of the sacrum; inversion of the distal sigmoid whereby it was drawn out through the anus; closure of the peritoneal surfaces over all the denuded pelvic surfaces without drainage, thus completing the abdominal operation. This technic was, of course, limited to growths located in the ampulla of the rectum and to those which had sufficient lumen remaining to permit a rectal tube to pass the growth for the purpose of inverting the sigmoid.

While there was but one death in the original eight cases operated upon without drainage, the convalescence following the first operation was usually quite stormy due to the fact that the connective tissue in the hollow of the sacrum which had been devitalized by ligation of the vessels, usually sloughed; as a result an abscess developed and perforated into the rectum. It was, therefore, necessary to wait until this had taken place. So a plan for drainage appeared to be a necessity. This was found relatively easy in women for a posterior colpotomy permitted the drawing of a large drain through the vagina, which relieved the situation. But in order to do the same thing in male patients, it was necessary to leave an intraperitoneal drain, thus thwarting one of the principal objects of the primary technic. After a closer study of the male pelvis, it was



soon found that a drain placed in contact with the inverted rectum and drawn out through the lower end of the wound could be enclosed in a peritoneal canal made by bringing the pelvic peritoneum together from the two sides above the drain. Thus the drain was extraperitoneal although brought out through an abdominal wound. This solved the difficulty as far as dealing with clearly operable, nonobstructive cancer of the ampulla of the rectum was concerned, but was not applicable to those formidable cases in which there was a stricture of the rectum proper or in those still more formidable recto-sigmoid cancers which were too high for a low operation and too low for a high operation.

On being confronted by this type and location of a cancer of the recto-sigmoid in the case of a very important individual who had a number of doctors in the family, I determined to apply these principles in another way and, therefore, after ligating the superior hemorrhoidal and mobilizing the rectum and sigmoid from the hollow of the sacrum even down to the tip of the coccyx and also mobilizing it from the bladder and prostate, clamps were placed low down on the rectum, leaving but a small stub of rectum. The rectum was severed between the clamps and the growth brought up and removed, the colostomy performed and the operation completed just as in the original technic except that the clamp on the stub of the rectum was allowed to remain and accompany the drain. Having succeeded with this technic in this type of case, I determined to apply the same principle in obstructive cancer lower down. By inclusion of these two latter classes, namely, obstructive cancer of the recto-sigmoid and obstructive cancer of the rectum proper, the mortality has been decidedly increased. For while I was able to report my first fifty cases with a mortality of less than 5 per cent, the operative mortality, since these more severe cases have been included, is brought above 7 per cent in a total of almost one hundred cases. The recurrences, of course, will be greater than in the original group of cases which included only the nonobstructive carcinoma of the rectum. In the original report of eight cases with one death I am able to show a record of four cases passing the five year period without evidence of recurrence, two of the four cases dying in the sixth year, two others living more than ten years, one of the two living into

the thirteenth year in perfect health. The obstructive cases, of course, are farther advanced and, therefore, while we have not made a complete follow-up of these cases, we know very well that no such record as was shown in the first series of eight cases will hold good when all the types of cases are included as we now do. This only brings us back to the original statement that the only hope for cure in cancer of the rectum is early operation. Early cancer of the rectum is in my opinion amongst the most hopeful of all the cancers in the body for the reason that its peculiar location makes it possible to more thoroughly remove the lymphatics than in other parts of the body. By beginning at the promontory of the sacrum, and ligating the blood vessels and lymphatics at this point and removing all the fat in the hollow of the sacrum along with the rectum and fascia propria, one of the most ideal operations for cancer may be performed. I am entirely convinced that the prospect with cancer of the rectum as it comes to the surgeon of today is as good and more than likely better than carcinoma of the breast. Certainly it is much better than carcinoma of the uterus when treated by radical operation and many times better than carcinoma of the stomach.

Before closing, I would like to leave a few personal observations based upon my experience.

1. The most serious consideration in connection with the high mortality of operations for cancer of the rectum is the urological complications which are likely to be present in these patients in the form of deficient kidney function or prostatic hypertrophy. These are very serious complications and should be carefully investigated and considered before a decision is made to do a radical operation for carcinoma of the rectum.

2. The drainage remaining in place between operations must be ample and must not be encroached upon by pressure at its exit through the abdominal wall. My own preference is a roll of gauze wicks laid straight and surrounded by rubber tissue making a large cigarette drain and leaving plenty of gauze tip exposed at the sacral end.

3. No attempt must be made to close the wound following the second or proctectomy operation. The larger the opening left the less likelihood there will be of a troublesome discharging fistula lasting for months or even years.

Concerning modifications. Many modifications of the technic have already been suggested. I was recently attending a surgical meeting. One of my surgical friends saw me across the hall and came to tell me that he had done my operation within the past two weeks but added that he did it all at one stage. Upon being asked with what results, he said the patient didn't live. Another came to me very enthusiastically and said he had done a half dozen of this operation recently but he didn't drain. He did not state the results. This was not a modification, but my original plan which had been abandoned. It has also been suggested that a wound be made in the ischio-rectal space for drainage instead of using the abdominal wound. This is a very rational suggestion and is one to which I have given serious consideration, but it leaves convalescent patients with a sore front and back and requires turning the patient over for a second operation when he has already undergone a serious operation. Another modification which has received serious consideration by me, and in fact has been tried in one instance, is the suggestion of leaving the stub of rectum and anus, in serious cases where the cancer has been located at the recto-sigmoid junction, draining through the rectum with a tube, or by cutting the sphincters and packing the rectum. The case in which I tried this was one in which the patient almost died from uremia following the first operation. He hiccupped at intervals for weeks. We finally gave up the thought of removing the rectum, drained for some weeks, then removed the drain and cut the sphincters. After nearly two months the patient developed severe chills. Finally an abscess broke through the rectum. Soon the opening healed again. The patient showed a marked sepsis so that it finally became necessary, in the face of these great difficulties, to remove the rectum. This was done, all the sepsis disappeared and the patient made a good recovery.

In dealing with drainage of these cases, it must always be remembered that we have denuded all the hollow of the sacrum of its normal connective tissue. That this concavity of the sacrum becomes a fixed wall in a large granulating cavity. If the outside opening closes early, pus dams up in this granulating cavity, dilates it and gives a condition analogous to an ischio-rectal abscess which has been opened and forms an ischio-rectal fistula. It seems that if a por-

tion of the rectum is allowed to remain, the active circulation of this intestine causes the cut end of the rectum to heal over and close off this large granulating cavity in the hollow of the sacrum. Hence the absolute necessity of not only removing all the rectum and anal muscles, but of leaving the wound wide open until granulations close the wound from within outward. Also the experience of various operators, including myself, in attempting to remove the rectal cancer and yet retain sphincter control has been very disappointing for in most cases cancer returns. One of the most natural and rational questions that is asked is: Inasmuch as the second operation is only a five minute operation, why not complete it at one operation? In answer it may be said: In the first place the second operation is by no means so simple at the time of the first operation as it is after nature has thrown out reparative material, producing edema which constitutes a self limiting or actual line of cleavage which defines the tissues to be removed. In the second place, a patient who has been subjected to the long tedious first stage of the operation has about all he can do to furnish protective material for the time being. By opening up the connective tissue spaces around the lower rectum and anus, the absorbing wound surface is almost double in amount. This extra seems to necessitate just that much more fight than certain patients are prepared to make.

#### DISCUSSION

DR. MANN: It has been a great pleasure to once more hear our old friend Doctor Coffey. He always gives something worth while. He is a progressive man and talks to his audience on things which he has thought out himself. It has been very interesting to hear his opinion as to what to say to the patients. It undoubtedly helps to bring them to a quicker decision for an operation. The operation which he has worked out, up to the point at which it is today, seems to me the best operation which can be done on cancer of the rectum provided it is within the judgment of the doctor to do it. There would be some inoperable cases which can be helped by either colostomy or one of the other lower operations. His schematic drawing here shows us the reason for abandoning the posterior operation. Almost the best reported statistics are about 16 per cent of those operated or 4 per cent of those seen, living at the end of three years, practically none at the end of five years for the lower operation. The best statistics I know are probably those of 22.7 living at the end of three years as a result of the combined operation as compared with 4 per cent of the posterior operation.

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The reason for doing such a severe type of operation is because more people live longer if they are operated in that way. Doctor Coffey has done a wonderful piece of work in working out the gauze and cigarette drain, and I am delighted to have heard Doctor Coffey again.

DR. STRACHAUER: It is a pleasure to bear testimony to the great value of Dr. Coffey's contribution to the surgery of the rectum. In my experience his operation, when indicated, is superior to any procedure thus far devised. My partner, Dr. James A. Johnson, and I have performed twenty-two Coffey operations. My first nine were without a death. It was my misfortune not to have become acquainted with the Coffey technic until a few years ago, up to which time I dreaded the responsibility of cases of cancer of the rectum. Now I find satisfaction in operating upon them.

The work of W. E. Miles, of England, his studies of the natural history and pathology of cancer of the rectum, and Dr. Coffey's technical developments are, in my opinion, the two outstanding contributions of recent years.

A knowledge of the pathology of the spread of cancer of the rectum is absolutely fundamental to the carrying out of a properly planned attack on cancer in this field. If as a profession we are agreed on the necessity for removal of the axillary and cervical lymph nodes in carcinoma of the breast and lip respectively, why have we forgotten the identical importance of the regional lymph nodes in cases of cancer of the rectum? The consideration in the past has been how far above and below the cancer in the bowel we should go. While this is important in cancer of the rectum, the removal of the mesenteric and regional lymph nodes, the levator ani muscles and the lymph nodes in association with the ischio-rectal fossa and in the hollow of the sacrum are equally important factors in obtaining the best results.

Technically the Coffey operation as compared to the Kraske types is comparable to abdominal hysterectomy as compared to the vaginal route. In one the operation is performed through adequate exposure with ample opportunity to see what is being done and ability to attack the circulation at its source. In the other the operation is performed in the dark. The toilet of the peritoneal cavity is as complete and thorough after the Coffey operation as following an abdominal hysterectomy. Raw surfaces are covered with peritoneum and the peritoneal cavity itself is closed and separated from the field of septic contamination. Hemorrhage, the equivalent of shock, and sepsis are avoided. Hemorrhage prepares the soil for pneumonia and sepsis. These are the two factors most responsible for the morbidity and mortality in the other types of operation.

The technic of the artificial anus is extremely important. I have insisted upon providing what I term a saxophone pouch or reservoir for the accumulation of feces below the level of the exit. This is easily devised in cases having an ample sigmoid. In the absence of the latter the descending colon should be mobilized and brought down. When such a pouch is provided these patients have very little more difficulty with their bowels than the normal individual; the bowels move once or twice daily and that is all. I have patients with this type of colostomy engaged in various occupations. One such patient rides horseback and plays golf.

Radium, even with the recent imbedding technic with gold tubes containing the emanation, while not causing the pain and proctitis that the topical forms of application do, has only a palliative value.

With the wide excision of bowel and the removal of the regional lymph nodes the operation stands firmly on a scientific basis.

Since it is well known that cancer in this field remains for a long time a local disease, by the increased employment of this operation we should be able to look forward to a new and brighter chapter in surgery of cancer of the rectum.

DR. JAMES A. JOHNSON: It has been a great privilege for me to listen to Dr. Coffey's paper and hear several points in regard to technic that I was anxious to have cleared up. Dr. Coffey has so thoroughly discussed every phase of the operation that it has been a great satisfaction to me.

The great advantage of the Coffey operation is that it provides for thorough removal of all the regional glands. There is a complete block of the lymphatics during the first stage.

It has been my experience that these patients have received a more satisfactory colostomy. Dr. Strachauer spoke of producing a pouch for the feces to rest in before being expelled. I have followed this same procedure and am sure it leaves a firmer stool and less external soiling.

The operation is a severe one and I am glad that Dr. Coffey impressed us so thoroughly with the fact that it must be done in two stages. Most of these cases occur in older people and they are not able to withstand the shock of a one-stage operation.

There is one thing that must be kept in mind and that is, when a cancer is located at or near the mucocutaneous margin of the anus the inguinal glands must be dissected out, because lesions in that locality drain directly into them.

I am delighted to have had the opportunity to listen to Dr. Coffey's splendid presentation.

#### SODIUM BROMIDE INTRAVENOUSLY

Sodium bromide may be injected intravenously, provided the liability of such an injection causing colloidoclastic shock is reckoned with. It seems, how-

ever, that mere "gastric distress" would call for better dilution of the dose given by mouth, as with a tumblerful of milk, or for introduction by way of the rectum, rather than intravenous injection. (Jour. A. M. A. Jan. 8, 1927, p. 120.)

## THE MORE COMMON RECTAL COMPLICATIONS OF PREGNANCY\*

W. A. FANSLER, M.D., F.A.C.S.  
*Minneapolis*

Considering the course of pregnancy with the attendant engorgement of all the pelvic vessels and the pressure of the gravid uterus, it is little wonder that rectal affections are among its most frequent complications. While in themselves these conditions are usually not serious enough to threaten the life of the patient, still they are very painful and may be the cause of onset of serious complications. I have frequently had women tell me that pains of labor were nothing when compared to the pain caused by complicating hemorrhoids or fissure. Under these conditions it would seem that the patient is fully justified in asking that, if possible, she be spared this added suffering. At the present time I fear that too many medical men are inclined to make light of these troubles, forgetting that occasionally the side show may prove more interesting than the main circus.

Any factor which retards the flow of blood from the rectum causes a dilation of the hemorrhoidal vessels and renders the region more susceptible to trauma. This engorgement also renders the folds of the rectum more pronounced and hence the crypts of Morgagni deeper. In this condition they retain foreign particles more easily and are more likely to become infected. Constipation is also a frequent condition and the passage of hard stools over this engorged tissue easily abrades and injures it.

Rectal conditions in pregnancy fall into two classes: those which can be relieved by medical measures and those which demand operation. Moderate hemorrhoids without complications can usually be carried to term of pregnancy without operation. This is also true of fissure and fistula. On the other hand prolapsed and gangrenous hemorrhoids or perirectal abscess demand immediate operation. Palliative or expectant treatment in these conditions is more dangerous than operation. In addition to these groups where the issue is clearly cut there is a third group of doubtful cases in which the physician must decide whether surgery or medicine is indicated.

The most important consideration in the non-operative procedure is the regulation of the bowels. Either constipation or diarrhea is almost sure to produce trouble. One hard stool causing severe straining may abrade the hemorrhoids, bring them down so they cannot be replaced or produce thrombosis. In fissure it is likely to produce severe pain and spasm which will persist. The patient should be warned to never strain at the stool. If the bowels do not move easily an enema of olive oil and warm water may be taken. The enema habit is not a good one but it is much better in pregnancy than the straining incident to a hard constipated stool. If the patient is habitually constipated liquid petrolatum by mouth is indicated. Sufficient doses should be given to produce one or two movements in twenty-four hours. This should be continued throughout pregnancy and post-partum. After bowel movements the patient should lie down an hour or two with the foot of the bed elevated. She should also be warned against being on her feet too much, long auto rides, lifting, stooping or any undue exercise. Diarrhea is as vicious as constipation, so drastic cathartics should be avoided. In case diarrhea develops from unforeseen causes it should be checked at once. Bismuth subcarbonate and tincture of camphorated opium will quickly do this in most cases.

In considering operative procedure there are a number of things to bear in mind. If the patient's history and examination indicate a normal course of pregnancy, operation in the first few weeks may be freely advised. On the other hand, if the patient gives the history of previous miscarriage or systemic disease, or if the history of the present pregnancy indicates a tendency toward miscarriage, operation should be avoided if possible. This is true regardless of the stage of pregnancy. If, however, the rectal condition is one which will likely grow more serious as pregnancy advances, then, even in the presence of a somewhat questionable history or physical findings, operation should be seriously considered. In the case of hemorrhoids, treatment by interstitial injection can be done. It is better to take the slight chance at this time than to be confronted with a greater one a few months later. Patients seen in the later months of pregnancy should be told that there is added danger and advised where possible to postpone more radical treatment until after childbirth.

\*Read before the Southern Minnesota Medical Association, Mankato, Minnesota, Oct. 18, 1926.



There are of course a certain group of cases in which operation is a necessity, regardless of the possibility of complications. The most common of these are perirectal abscess and strangulated and necrotic hemorrhoids. These should be operated and the sooner the better. Delay only increases the chance of more serious conditions arising. I recall two cases of thrombotic and necrotic hemorrhoids in women within two weeks of term which were operated upon without mishap under local anesthesia. I believe that local anesthesia is the anesthetic of choice in all rectal cases operated during pregnancy. While as a matter of principle I endeavor to avoid operative procedure during the later months of pregnancy I wish to go on record as believing that in normal pregnancy the ordinary rectal conditions may be operated with comparatively little danger at almost any stage of pregnancy.

In the case of hemorrhoids of the prolapsing internal variety I believe they are best dealt with by the interstitial injection of 5 per cent quinine urea hydrochloride. As previously stated I prefer not to inject cases which have passed beyond the fifth month. Nevertheless if pain, bleeding and other symptoms are severe enough I inject them regardless of how far pregnancy has advanced. As a matter of fact usually the cases which are going to have severe trouble will have enough indication by the fifth month so that they will present themselves for treatment before that time. So far I have had no mishap from injection at any stage of pregnancy, although of course those done in the last stages of pregnancy have been too few in number to draw definite conclusions. Occasionally a case is hard to decide. I recall a patient which I saw with one of our obstetricians, who had passed her sixth month. She gave a history of two previous miscarriages and had had one or two showings of blood during the present pregnancy. The hemorrhoids protruded every time she walked and with every defecation. The pain was very severe for an hour or two afterwards. Rest in bed did not relieve this condition as they protruded as soon as she was on her feet. Frankly, I would have preferred to dodge the issue in this case but she insisted on having some relief and after acquainting the family and patient with the possibilities we decided to inject the hemorrhoids with quinine urea hydrochloride. Two injections were sufficient to shrink the hemor-

rhoids so that they did not protrude and she passed the remainder of her pregnancy in perfect comfort, in so far as the rectum was concerned. I mention this case because I believe this type of treatment is more simple, less dangerous than the usual operative procedure and that its more widespread use is desirable.

There is another group of cases which I think may properly be included in this paper and that is the post-partum patients. Many patients who go through pregnancy successfully develop trouble due to the strain of labor. The two most common conditions are prolapsed and thrombotic hemorrhoids and fissure. The hemorrhoids usually occur during labor. In the case of prolapsed hemorrhoids replacement above the anal sphincter will usually give relief, provided they will remain in that position. Thrombotic hemorrhoids, if small, may be treated by local application, but if they are large enough so that the clot ulcerates through they should be operated at once. A ragged sloughing wound with undermined edges is more dangerous than a proper surgical one.

The other condition is fissure. This is usually caused by the habit of confining the bowels two or three days after confinement and then relying on an enema to remove the accumulation. The enema tip in the hands of an inexperienced nurse or the passage of a few rock-like masses of stool over the already engorged and tender rectal and anal tissues frequently produces a fissure. I have always contended that the routine administration of liquid petrolatum, beginning immediately after delivery, would prevent most of these cases. One obstetrician of my acquaintance has adopted it and now, instead of having ten or twelve cases of fissure a year from him, I see one or two. In post-partum cases it is well to let a month elapse before operation, but where necessary, operation may be done at any time.

In conclusion I may say—

1. The majority of cases, if seen before some acute attack, may be carried through their pregnancy by the ordinary precautions mentioned in this paper.

2. In the early weeks of normal pregnancy there is little danger in the ordinary rectal operations. Operation may be freely advised.

3. Operation in the later months of pregnancy also seems reasonably safe, but where pos-

sible, it is better postponed until after the termination of the pregnancy.

4. In certain acute conditions operative procedure should be advised at once and without hesitation, as delays and palliative measures are more dangerous than the operation.

5. In cases of internal hemorrhoids the use of interstitial injections of quinine urea hydrochloride is less disturbing than operation and usually as effective.

#### DISCUSSION

DR. LOUIS A. BUIE (Rochester, Minn.)—Rectal complications occurring during pregnancy cause extreme discomfort and at times are serious enough to demand surgical attention. Whenever possible, operative measures should be avoided during the two months previous to the onset of labor for two reasons:

1. Some form of anesthesia is necessary, local or regional preferred, and this, with the necessity of cleansing enemas as a part of the program of post-operative care of the wound, may terminate the pregnancy.

2. It is probable that new distortions will be caused during labor which will necessitate a second rectal operation. Besides, if the rectal wound is not entirely healed at the onset of labor, obvious difficulties will arise.

During the earlier months of pregnancy, rectal complications may be cared for almost as freely as if the patient were otherwise normal, but such difficulties do not usually arise until two or three months before term.

Palliation is the best procedure whenever possible. Dr. Fansler has stressed the importance of regulating bowel habits and the intelligent use of laxatives and enemas. He has advocated quinine urea hydrochloride injection and recommended its more widespread use. I am opposed to the employment of this measure by those who have not had experience with it. In the last month I have seen three patients who required extensive resections and even colostomy, because of stricture and distortion following such injections. Dr. Fansler's success with this treatment is due to his experience and such methods should be used only by those who are experienced.

#### SPENGLER TREATMENT OF TUBERCULOSIS

The Spengler immune blood treatment of tuberculosis is a method based on the principle of passive immunization. In 1908, Carl Spengler announced his theory that red blood cells play an important part in immunity to tuberculosis, immune substances being contained within the stroma of the erythrocytes of the resistant animal. He reported favorable results with his preparation, "Spengler's I. K." The method has had only small support. From the published reviews it may be concluded that the method is not of value. (Jour. A. M. A., Feb. 5, 1927, p. 425.)

#### THE NATURE OF THE GLOSSITIS IN PERNICIOUS ANEMIA\*

J. P. SCHNEIDER, M.D.

Associate Professor of Medicine, University of Minnesota  
and

JAMES B. CAREY, M.D.

Minneapolis

One of us (J. P. S.) has had during the past twelve years opportunity to study four hundred and fifty patients ill with this fatal type of anemia. A majority of these patients were under close observation for several years, not a few for four or five years, two as long as ten years. During this period he has published certain studies.<sup>1, 2, 3, 4, 5</sup> Associates<sup>6, 7, 8, 9</sup> have covered other aspects. Not until 1925 was it felt that sufficient fundamental work had been done by the workers in general interested in the hemolytic diseases to warrant study of the most tantalizing of all the features of pernicious anemia, namely, the question of etiology.

Since glossitis is so prominent a phenomenon occurring at some stage of the disease in at least eighty per cent of all cases, since it is so frequently an early and forerunning symptom, and since it is under direct observation in its active as well as its atrophic stage, it occurred to us to give it some study.

It was while making a survey of the literature from the period of Addison, 1855, to Ehrlich in 1900 that one of us came across a copy of "Severest Anemias" by William Hunter, published in 1909.<sup>10</sup> Not only does this unique volume contain a complete bibliography from 1822 to 1902, inclusive, but also most excellent plates of the post-mortem tongue and other gastrointestinal lesions. His observations in 1903 established the following facts;

1. A total reduction in the size of the tongue, often to 60 and 50 per cent of normal. That this volume shrinkage was accounted for not only by atrophy of mucosa and submucosa, but by lessened muscle volume.

2. That the gross visible evidence of inflammation during life was obscured by the anemia, that redness and swelling occurred with diminishing vigor and intensity as the anemia progressed, and that preparation of the gross specimen in Keiserling's fluid revealed strikingly both the active and atrophic features.

\*From the Medical Division, Nicollet Clinic, Minneapolis. Read before the Southern Minnesota Medical Association, Mankato, Oct. 18, 1926, and the Ramsey County Medical Society, St. Paul, Jan. 13, 1927.

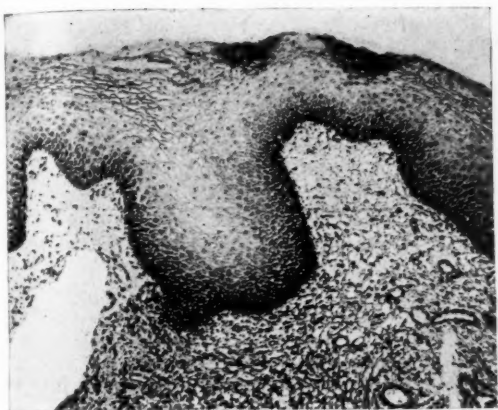


Fig. 1. Normal tongue, mucosa and submucosa.



Fig. 2. Specimen of tongue from man aged fifty, clinically a typical case of pernicious anemia with cord involvement, who died on the neurological service of the Minneapolis General Hospital. The autopsy confirmed the diagnosis. Section stained with Gram-Weigert shows the presence of cocci as detailed by Hunter lying between mucosa and submucosa.

3. That histologic study of sections of tongue show mucosal lesions of all degrees of severity, from papillitis to necrosis and atrophy. That in the neighborhood of the active lesions there is small-celled exudation, and proliferation in the tissues and in the walls of the vessels.

4. That the mucosa and submucosa harbor streptococci "staining badly with Gram's."

In justice to Hunter it is proper that we quote a statement he made in 1900, to wit, "The glossitis is not producible by ordinary oral sepsis, however severe that may be, but once contracted, it is greatly aggravated by such sepsis." Instead of having maintained, as he is so frequently accused of maintaining by writers and speakers, that abscessed teeth, pyorrhea alveolaris and "oral sepsis" caused the anemia, he sharply differentiated the fundamental unknown factor from the obvious foci as we speak of them now,

and also elsewhere as late as 1922<sup>11</sup> he again emphasized the total dissimilarity between a hemolytic anemia and a septic anemia.

Hunter's observations on the tongue done on post-mortem material met with the criticism that, while he demonstrated a streptococcal invasion of the tissues, this is not necessarily living pathology; the coccic invasion might be a terminal phenomenon and the actual changes occurring during the life of the patient might be due to a variety of causes, to wit: (1) the anemia per se; (2) an unknown toxic product eliminated into the mouth in the saliva; (3) neuro-trophic.

In view of these objections to study of the pathology and bacteriology of the tongue lesions in the dead and, I might add, of which studies

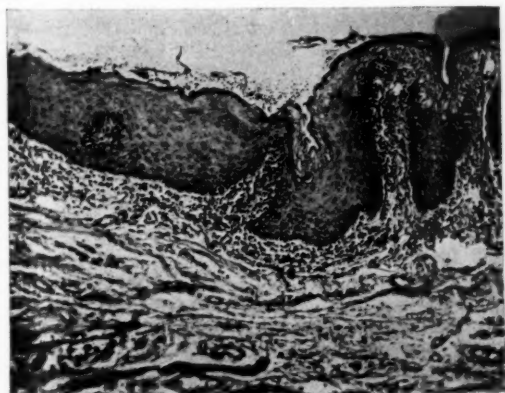


Fig. 3. Case 1. Low power view of section through acute glossitic area. Note mucous membrane desquamation, cloudy swelling and small round cell infiltration of submucosa.

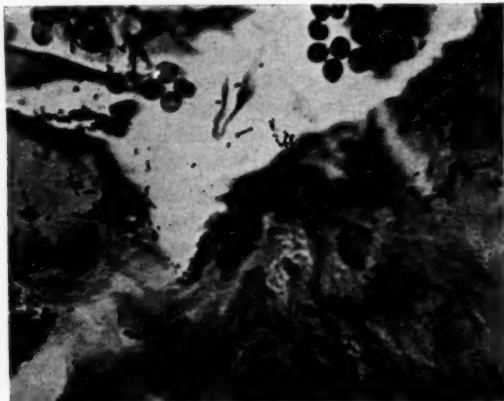


Fig. 4. Case 1. High power. Note streptococci in mucosa, in an area of destruction.

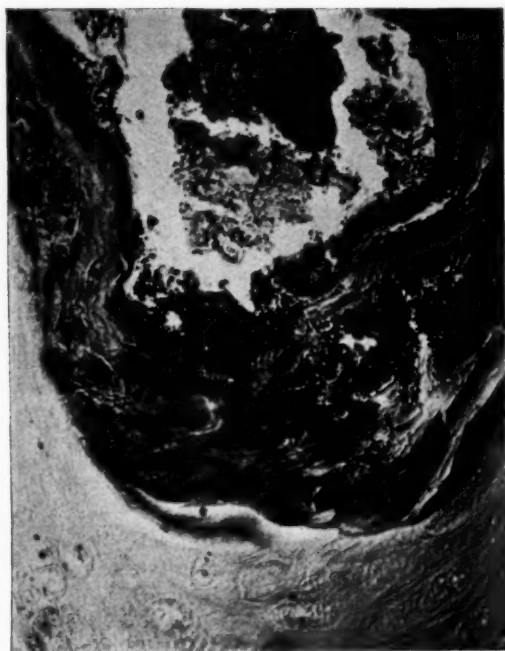


Fig. 5. Case 1. Low power. Mucosa almost totally destroyed with necrotic plug lying between papillae.



Fig. 6. Case 1. Low power. Base of area shown in Figure 5 with submucosa for orientation.

and objections a certain recent worker<sup>12</sup> is apparently unaware, we began in December, 1925, to investigate the glossitic lesions by the biopsy method. So far as our search of the literature reveals, there is no prior record of biopsy study of these lesions.

The following technic is employed:

Patients are selected who present red, rough, painful glossitic areas on the margin of the tongue. In the operating room with complete surgical asepsis the surgeon anesthetizes the area selected with 1 per cent novocaine and adrenalin, using care not to penetrate the biopsy section with the needle. An assistant holds the tongue outside of the oral space as far as possible with comfort. Surface sterilization is produced by the repeated swabbing and application of 95 per cent alcohol for fifteen minutes. So far we have found this to be the best agent to use. Iodine penetrates the total specimen after removal and inhibits growth of the organisms. A wedge of tongue a half centimeter wide and a centimeter deep is removed and transferred to a sterile container. The cut area is approximated with fine catgut sutures and heals kindly

without untoward symptoms in five days to a week. The bacteriological work is done by Dr. Winford P. Larsen, the biopsy specimen being sent labelled by number only.

*Case 1.*—Pernicious Anemia. Mr. E. O., a farmer, aged 47, was first seen January 4, 1926, complaining of dryness of mouth and sore tongue. The family history was negative, and the past history uneventful. The soreness of the tongue was first noted about January 1925, accompanied by dryness of the mouth and substernal soreness on swallowing. The trouble developed slowly but progressively until the present date. Lately he has tired easily with a tendency to drowsiness. He has lost about eight pounds in weight during this year. He has also noted transient numbness of the hands and feet. Examination was essentially negative except that the tongue showed patches of intense glossitis with a general atrophic appearance, and the spleen was just palpable on deep inspiration under the left costal margin. Neurological examination showed evidence of posterolateral sclerosis of slight degree. Urine was normal. Blood Wassermann was negative. Gastric secretory analysis after Ewald meal showed free HCl 0. Bile index was 2 to 3 and at the same time the urine contained a trace of urobilinogen. January 4, 1926: hemoglobin 79; r.b.c. 3,760,000; w.b.c. 7,000; index 1.0. Smears showed characteristic findings of pernicious anemia. Nine subsequent blood counts showed a gradual gain

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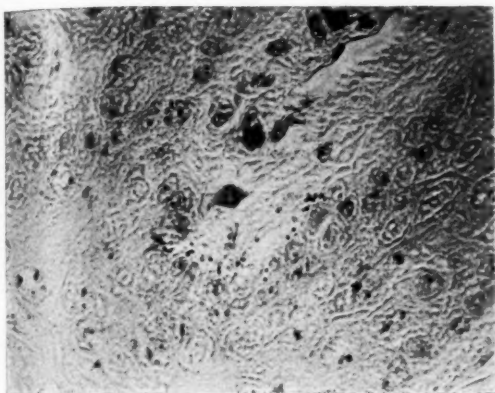


Fig. 7. Case 1. High power. Area of coccic invasion in lymphatics from area shown in Figure 6.

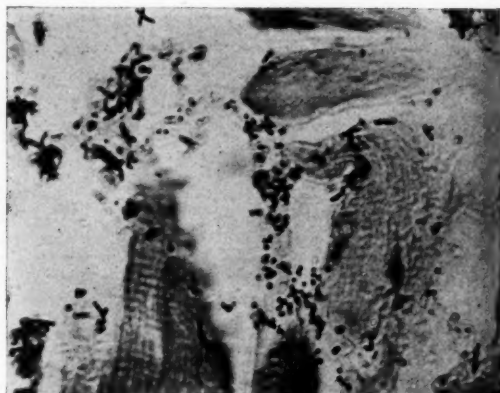


Fig. 8. Case 1. High power. Area of invasion of muscularis, just beneath submucosa.

until April 12, at which time the hemoglobin was 83; r.b.c. 4,180,000; index 1.0. Clinical notes during this period indicated that the glossitis varied markedly in degree at different times, being more severe at such times as the blood seemed to be improving and often diminishing rapidly in a given area by the time the blood had fallen. The onset of any attack frequently occurred with great abruptness. Specimens of the tongue were removed January 6, 1926, and January 22, 1926, and streptococcus viridans was recovered in pure culture from both specimens. The third specimen, removed February 26, was sectioned and stained with Gram-Weigert stain. (See Figures 3 to 9 inclusive.)

**Case 2.—Pernicious Anemia.** Mrs. A. H. P., aged 74, was first seen October 4, 1923, complaining of dyspnea, palpitation and weakness. The family history was negative. The past history revealed typhoid fever as a girl. Fifteen years ago a gastric achylia was found. Her present trouble began one year ago with a fainting spell, after which she began to notice edema of the legs, dyspnea, some discomfort in the left hypochondrium, increasing pallor and diarrhea. The examination was negative except that the tongue was moderately atrophic, but with no active glossitis, and there was edema of the legs. Urine was negative. Blood Wassermann was negative. Gastric secretory analysis after Ewald meal showed no free HCl. Stool was negative. Gastrointestinal tract was negative by roentgen examination. Hemoglobin was 77 per cent; r.b.c. 3,930,000; w.b.c. 8,250; index .98. The patient was placed upon routine management and was not seen again until January 13, 1926, when she came in complaining of weakness, dyspnea and some epigastric soreness. She stated that during July, August, and September of 1925 her tongue had been sore. Examination at this time showed the same smooth, atrophic tongue and, in addition, a patch of glossitis on the left edge, near the tip. The skin and sclera were definitely icteric. The sternum was tender and there was a soft systolic basal cardiac murmur. The liver was slightly enlarged and the edge of the spleen was indefinitely palpable at the costal margin. The

edema of the legs was still present. Hemoglobin was 36 per cent; r.b.c. 1,790,000; w.b.c. 5,900; index 1.0. The smears showed typical morphological changes of pernicious anemia. The bile index was 9 to 10. There was a trace of bile in the urine and plus 1 urobilinogen. Subsequent blood counts have been confirmatory, namely, February 3, 1926; hemoglobin 58 per cent; r.b.c. 2,490,000; index 1.5; w.b.c. 5,050. January 13, 1926, a specimen of the tongue was removed as described. The same organism as noted in the previous specimens was obtained.

**Case 3.—Pernicious Anemia.** Miss A. G., aged fifty-one years, was first seen November 6, 1925, complaining of stiffness in the hips and legs. The family history and past history were negative. In November, 1924, she began to notice paresthesia of the fingers and feet, and earlier during the year she remembers having had a sore tongue. General examination was in every way negative. Neurological examination showed evidence of a subacute combined sclerosis. The urine was negative. Gastric analysis after an Ewald meal showed free HCl 0. *B. coli* was recovered from the duodenal contents and the pigment values totalled 16,400 units. Hemoglobin was 69 per cent; r.b.c. 2,790,000; index 1.2; w.b.c. 4,200. Smears were characteristic for pernicious anemia. Clinical notes state that in December she had sore tongue and mouth which gradually became worse until January 26, 1926, at which time she had a typical glossitis involving one-third of the tongue with a red granular appearance. On this date, January 26, 1926, a specimen of the tongue was removed. A streptococcus viridans of the type previously reported was recovered in pure culture.

**Case 4.—Carcinoma of the Stomach. Resection.** Mrs. O. W., aged sixty-three years, was first seen February 18, 1924, complaining of stomach trouble. The family history was negative and the past history revealed typhoid fever at the age of twenty-seven years. One year ago she began to lose her appetite and to have distress in the epigastrium immediately after meals. She soon began to vomit her meals and finally could only take milk and raw eggs. She lost forty pounds

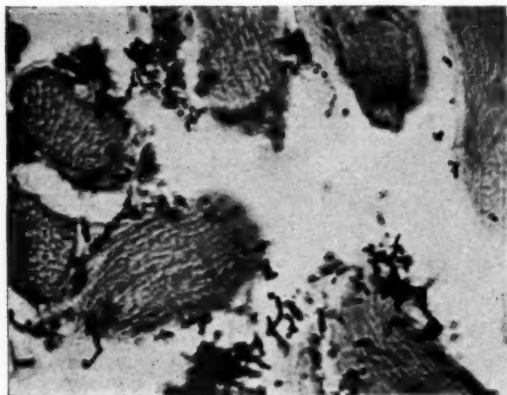


Fig. 9. Case 1. High power. Area of involvement in muscularis.

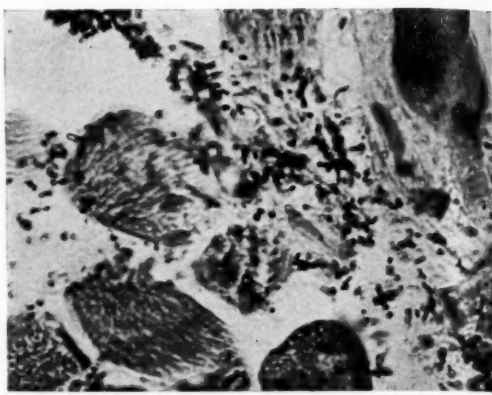


Fig. 10. Case 1. High power. Area of involvement in connective tissue of muscularis, near the under surface of tongue.

of weight in a year. General examination was negative except for cachexia, moderate arteriosclerosis and deep epigastric tenderness. Urine was negative. Blood Wassermann was negative. Hemoglobin was 70 per cent; r.b.c. 4,690,000; index .76. Gastric secretory analysis after Ewald meal showed free HCl 34, total acidity 55. The roentgen examination of the stomach showed a six-hour retention and an obstructive lesion at the prepyloric region which was diagnosed as carcinoma. At laparotomy on February 27, 1924, a large carcinoma extending from the pylorus up the lesser curvature about four inches was revealed. A Polya resection and anastomosis was performed. The post-operative course was uneventful. The patient was next seen two years later on February 16, 1926, when she complained of weakness, bloating and sore tongue. Examination at this time revealed a mild cachexia and a palpable tumor in the epigastrium which seemed to be the left lobe of the liver. Urine at this time showed plus 1 albumin and leucocytes. Bile index was 1 to 2. Urine showed a very faint trace of urobilinogen. Hemoglobin was 42 per cent; r.b.c. 3,320,000; w.b.c. 10,300; index .63. Smears showed many platelets and very few reticulated cells, a typical picture of secondary anemia. The patient was seen again March 19, 1926, at which time she complained of paresthesia of the finger tips of the left hand. At this visit the tongue was red with areas of glossitis, but no gross atrophy; instead, a large fissured tongue. The sclera were definitely jaundiced. Bile index was 2. Urine showed a faint trace of urobilinogen. Hemoglobin was 54 per cent; r.b.c. 3,240,000; index .84; w.b.c. 9,750. Smears were still characteristic of a moderately severe secondary anemia. A biopsy of the tongue was done March 23, 1926. No streptococci were found. The growth was abundant but a diplococcus of different type was present.

**Case 5.—Pernicious Anemia.** Mr. P. J. J., a farmer, aged 43, was first seen April 26, 1926, complaining of weakness and gas on the stomach. The family history and past history were both negative. The patient has had a sore tongue and mouth for about five years,

at intervals, and constantly since June, 1923. During this three-year period he has gradually become weaker, finally having to stop all hard work last summer. Recently he has had numbness of the hands and feet, spells of diarrhea, and at times dyspnea and palpitation. There has been no weight loss. Examination showed icterus of the skin and sclera, atrophy and general glossitis of the tongue, more noticeable on the edges. Neurological examination showed early moderate posterior-lateral sclerosis of the spinal cord. The urine showed a trace of urobilinogen. The stool was negative except for four plus urobilinogen and three plus urobilin. The blood Wassermann was negative. Hemoglobin was 35 per cent; r.b.c. 1,390,000; index 1.34; w.b.c. 7,200. The smears showed characteristic morphological changes of pernicious anemia, including nucleated red cells. The platelets were increased. Gastric secretory analysis after an Ewald meal showed free HCl 0. April 27, 1926, a biopsy was done on the tongue. The twenty-four hour culture showed streptococci but also a gram-negative bacillus which overgrew and made complete identification impossible.

**Case 6.—Pernicious Anemia.** Mr. N. H., aged 36, was first seen April 27, 1926, complaining of numbness of the hands and feet and distress in the epigastrium. The family history and past history were negative. In February, 1926, he first noticed weakness of the hand and fingers and, following that, paresthesia of the feet. Four months ago the mouth and tongue were sore and he thinks for several years past there have been spells of sore tongue, especially a period in December 1923. Dr. Murray's notes, at that time, record numerous small inflammatory lesions on the tongue, buccal membranes and pillars. The examination was normal except that the tongue showed a small patch of glossitis at the tip, without much atrophy. The neurological examination revealed evidence of early cord changes of posterior-lateral sclerosis. Urine was negative. Blood Wassermann was negative. Bile index was 5 to 6. Urine showed a trace of urobilinogen. Gastric secretory analysis after an Ewald meal showed a complete achylia. Blood volume index was

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.77. Hemoglobin was 60 per cent; r.b.c. 2,200,000; index 1.36; w.b.c. 4,350; p.m.n. 42, lymphocytes 58. The smears showed typical findings of pernicious anemia. A specimen of tongue was removed April 27, 1926, from a red, fissured area at the tip, and streptococcus viridans in pure culture was obtained.

*Case 7.*—Cholecystitis and Cholelithiasis. Mrs. A. O. M., aged 58, was first seen January 20, 1926, complaining of pains in the right side of the abdomen. The family history was negative and the past history showed typhoid fever at the age of eighteen. Since Christmas she has also had pain in the epigastrium which radiates to the shoulder. It comes on by spells, irregularly, and emission of gas brings relief. She has to avoid meat and heavy foods. The examination was negative except for some resistance over the gallbladder and appendix. X-ray films of the gallbladder showed it only partially filled on fifteen-hour films, indicating disease. Otherwise gastrointestinal roentgenography was negative. Free hydrochloric acid was present in the stomach contents. Urine was negative. Blood examination: hemoglobin 80 per cent; r.b.c. 4,730,000;



Fig. 11. Case 6. Streptococcus viridans from twenty-four hour veal broth culture grown from tongue tissue of Case 6.

w.b.c. 7,200; index .85. When examined on August 27, 1926, she stated that she has had a sore tongue off and on for five or six years, on both sides, and a sore, red mouth, remaining for three to five days and as abruptly disappearing, to be free for weeks and months. More recently it has been sore on the right side. The right side of the tongue was painful and red, with thickened areas on the edges. The inner side of the lower lip and the floor of the mouth were very red and swollen. No induration. No desquamation. The spleen was not palpable. Diagnosis: Moeller's glossitis. A specimen was removed from the tongue for culture, which was negative, sterile.

*Case 8.*—Pernicious Anemia. Migraine. Old Mitral Stenosis. Mrs. E. J. M., aged 42, was first seen April 19, 1925, complaining of burning and distress in the epigastrium, pain behind the eyes and on one side of the face, and vomiting. The family history showed that the father and one brother had mi-

graine headaches. The past history was negative except for rheumatism at the age of fourteen, of several weeks' duration, and a history of typical migraine since puberty. She has had a burning sensation in the epigastrium for one year and the bowels are loose by spells. Examination showed an old rheumatic mitral stenosis, well compensated. The tongue showed slight glossitis and atrophy. Blood examination September 7, 1926: hemoglobin 49 per cent; r.b.c. 3,160,000; color index .79. Previous examinations were essentially the same. Blood smears showed secondary anemia features. The urine was negative. Secretory stomach examination showed no free HCl. Secretory duodenal examination September 11, 1926, showed: color, black; urobilinogen 7,200; urobilin 6,800; bilirubin four plus. Neurological examination April 22, 1926, showed moderate impairment of vibratory sensation over toes and lower extremities, constituting early findings of posterolateral sclerosis of the spinal cord. A specimen of tongue was removed September 7, 1926, which showed a streptococcus of the viridans type in pure culture.

*Case 9.*—Epilepsy. Mr. G. L., single, aged 27, was first seen September 20, 1926, complaining of tenderness of the mouth. The family history was negative. The past history revealed numerous epileptic seizures. Since July 1926, the patient has had sore gums and mouth. He has been having treatments for "trench mouth," and has felt better. Examination was negative. Blood examination showed a hemoglobin of 87 per cent; r.b.c. 5,030,000; w.b.c. 9,750; p.m.n. 58; S. lymphocytes 34; L. mononuclears 5; eosinophiles 3. The color index was .87. On September 20, 1926, a specimen of the tongue was obtained which, on culture, was negative, sterile.

*Case 10.*—Ulcerative Colitis. Mr. R. H. P., single, aged 25, was first seen September 27, 1925, complaining of diarrhea. The family history and past history were negative. He has had periodic spells of looseness, alternating with constipation. There is some rectal soreness, but no blood or mucus in the stool. He has lost from five to ten pounds in weight. General physical examination was negative, except for a spastic type colon. Proctoscopic examination showed the usual colitis findings. The urine was negative. Blood examination was as follows: hemoglobin 75 per cent; r.b.c. 4,139,000; w.b.c. 15,900; p.m.n. 74 per cent; small lymphocytes 17; large mononuclears 7; eosinophiles 1; basophiles 1. Three stool specimens were negative for parasites, and cultures from the rectal wall showed only colon bacilli. Gastric secretory examination showed free HCl 88; total 100. The tongue was heavily coated, but not reddened; i.e., no actual glossitis. A specimen of the tongue was removed September 28, 1926, and cultured. The culture was negative for streptococci, but a bacillus was present which was not identified.

*Case 11.*—Pernicious Anemia. Mrs. A. McC., aged 37, was first seen October 5, 1926, complaining of numbness from the knees down in both legs. The family history and past history were negative. About eight years ago she began to notice numbness in both legs from the knees down. Lately she has been stag-

gering in her gait. Occasionally she has slight numbness in the fingers also. She has had attacks of sore tongue as far back as three years ago, but none for the past year. General examination showed only glossitis one plus, with atrophy three plus, and evidence of post-lateral sclerosis of the cord. The urine was negative. Wassermann blood examination was negative. Blood examination was as follows: hemoglobin 68 per cent; r.b.c. 2,520,000; index 1.3; w.b.c. 5,100; p.m.n. 41; lymphocytes 8; mononuclears 6; eosinophiles 2. Smears were typical for pernicious anemia. Gastric secretory examination showed free HCl 0. A specimen of the tongue was removed October 9, 1926, and cultured. *Streptococcus viridans* was present in pure culture.

**Case 12.**—Pernicious Anemia. Mr. C. O. R., aged 38, was first seen August 19, 1926, complaining of fatigue. The family history was negative. The past history was negative except for an attack of furunculosis one year ago, and sore tongue last spring, at which time he also remembers some stiffness of the legs. Examination was negative except for two areas of glossitis on the sides of the tongue, but only moderate atrophy. There was also an enlarged spleen. The blood count was: hemoglobin 73 per cent; r.b.c. 3,120,000; index 1.1; w.b.c. 4,950. The smears were characteristic of pernicious anemia. There was no free hydrochloric acid in the stomach. A specimen was taken through one of the glossitis areas on October 26, 1926, and a culture showed pure *streptococcus viridans*.

**Case 13.**—Arteriosclerosis. Mrs. J. W. H., aged 62, was first seen October 25, 1926, complaining of high blood pressure and an area of numbness in the left trunk. The family history and the past history were essentially negative. Her present illness dates from two years ago, during which time she has had a numb feeling in the left loin region which is not related to any gastrointestinal, cardiac, renal or pulmonary symptoms. She has also had a good deal of dizziness. Examination showed generalized arteriosclerotic changes with a blood pressure of 170/100 and normal urine. The neurological examination was negative for any organic lesion. The gastric analysis was normal and the Wassermann test was negative. She had a very mild non-specific papillitis of the tongue without atrophy. A specimen of the tongue was removed October 25, 1926, which on culture was sterile.

#### Progress Notes:

**Case 1** has been seen many times since the above report was made and twelve blood studies made on these several occasions have all shown typical morphological pernicious anemia findings, with total counts about the same. The last count, January 7, 1927, showed: Hemoglobin 79 per cent and r.b.c. 3,320,000, with index 1.1. A neurological examination done on this same date showed a progression both subjectively and objectively of his cord involvement.

**Case 8.**—Blood examinations in this case done on several dates subsequent to above report have still shown a moderately severe anemia, with rather doubtful morphological characteristics. The last neurological examination on October 12, 1926, showed, however, a

slight progression of the cord involvement; i.e., more definitely characteristic of pernicious anemia than previously noted.

**Case 12.**—This case was not seen since the above report until January 26, 1927, at which time his blood count was: Hemoglobin 78 per cent, r.b.c. 3,740,000, and index 1.0. The morphology was typical of pernicious anemia. The other six cases of pernicious anemia included in this study are all living, and are under observation.

#### DISCUSSION

It will be noted from Table I that in a total of nine biopsy specimens removed from eight patients ill with pernicious anemia, all yielded *streptococcus viridans* in pure culture except Cases 2 and 5, where accidental contamination prevented complete identification of one and a gram-negative bacillus was present from the onset in the other.

In the five controls, streptococci were absent in each instance. The normal tongue in the epileptic in the presence of marked gingivitis was sterile and the specimen in the patient with Moeller's glossitis (regarded by clinicians as a toxic manifestation) taken in an intensely red area was sterile. The large fissured tongue in carcinoma cachexia yielded a diplococcus and the heavily coated tongue in the patient with ulcerative colitis a bacillus not identified. This patient was selected to determine the possibility of complete surface sterilization in the presence of heavy surface growth of fungi.

It would appear that for the average conditions met in the glossitic inflammatory lesions, our technic gives reliable surface sterilization, and that the growth obtained is from organisms in the mucosa and submucosa as shown in the tissue sections.

Since the bacteriological study of the removed specimen is of the greater importance, no pathologic sections were made except in Case 1. From these sections it is evident at a glance that the invasion is an extensive and deep one, involving mucosa, submucosa and muscularis. In this same case one specimen was studied for monilia after the method of Ashford and for spirochetes by the usual technic without finding any of these organisms.

The regularity with which *streptococcus viridans* is found and its total absence in the controls suggests strongly that this organism is responsible for the glossitis lesions of the tongue during life.



TABLE I

Spec. No.	Case No.	Diagnosis	Tongue Findings		Bacteriological Report
1	1	Pernicious anemia	Glossitis 4	atrophy 1	Strep. viridans
2	1	Pernicious anemia	Glossitis 4	atrophy 1	Strep. viridans
3	2	Pernicious anemia	Glossitis 1	atrophy 2	Strep. not identified
4	3	Pernicious anemia	Glossitis 3	atrophy 1	Strep. viridans
5	4	Carcinoma gastrica	Glossitis 2	fissured	Diplococcus (definitely not strep.)
6	5	Pernicious anemia	Glossitis 2	atrophy 2	Strep. viridans plus a Gram. neg. organism
7	6	Pernicious anemia	Glossitis 1	atrophy 1	Strep. viridans
8	7	Moeller's glossitis	Glossitis 4	no atrophy	Sterile culture
9	8	Pernicious anemia	Glossitis 1	atrophy 2	Strep. viridans
10	9	Epilepsy	Normal		Sterile culture
11	10	Ulcerative colitis	Normal-coated		No. strep. Contaminating bacillus
12	11	Pernicious anemia	Glossitis 1	atrophy 2	Strep. viridans
13	12	Pernicious anemia	Glossitis 2	atrophy 1	Strep. viridans
14	13	Arteriosclerosis	Papillitis	no atrophy	Sterile

That the anemia per se does not act as a predisposing or favoring factor for the secondary invasion of the tongue is readily determined by the simple clinical observation that the tongue symptoms are antecedent to the anemia, as illustrated, for instance, in Case 6, where stomatitis and glossitis were noted in the patient's clinical record nearly three years before recognizable anemia developed. Furthermore, during the course of the anemia it is a recurring observation that a glossitis attack will precede for a week or ten days a drop in the blood values.

There is a wide discrepancy between the objective and subjective tongue findings. There may be little or no complaint with reference to the tongue and yet inspection will often reveal definite areas of active glossitis, particularly at one or the other margin, and much of the tongue will be extremely atrophic, indicating the effect of former glossitic attacks. There may be, as in Case 1, so much distress that the patient comes under care with glossitis as his chief complaint. It would appear from a study of the histology in this case that when the mucosa is destroyed to a degree allowing exposure of the submucosa, marked subjective symptoms result. When the glossitis objectively and grossly can be graded a

3 on the basis of 4, the patient will stress the tongue symptoms without direct inquiry.

In a good many instances a history of glossitic attacks must be sought months before the patient considered himself ill.

#### CONCLUSION

We have verified Hunter's clinical observations on the tongue phenomena in pernicious anemia. By applying the biopsy method of study to this organ we have made in the living the same histologic observations that he made in the dead, and have advanced the knowledge of the type of coccus responsible by bacteriological studies, demonstrating in nine specimens the uniform finding of a streptococcus of the viridans group. Having in mind his observations on the gastric and bowel mucosa, we find it difficult to get away from the assumption that they are also correct and to be accepted as occurring during the active life of the disease.

We are impressed with the possible etiologic significance of these findings. Further studies with this organism and its toxins are in progress.

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#### EPHEDRINE

The Council on Pharmacy and Chemistry states that the reports which have been issued since its first report was published, warrant the acceptance of the drug for New and Non-official Remedies and the recognition of acceptable brands if the firms which market them will agree to be conservative in their claims. The Council report is accomplished by a report of the A. M. A. Chemical Laboratory on the establishment of standards for ephedrine hydrochloride and ephedrine sulphate. The Laboratory's report shows that the ephedrine hydrochloride of the Abbott Laboratories and of Burroughs, Wellcome & Co. meet the provisional standards, but that a pure sulphate has not yet been prepared. However, it appears that the study which is being made in the laboratories of Eli Lilly & Co., gives promise that a satisfactory product will shortly be available. The Council (1) endorsed the report of the A. M. A. Chemical Laboratory and provisionally adopted the submitted standards for ephedrine hydrochloride; (2) it admitted ephedrine to New and Non-official Remedies; (3) it voted to accept the ephedrine hydrochloride of the Abbott Laboratories when acceptable advertising is issued; (4) it voted to accept the ephedrine hydrochloride of Burroughs, Wellcome & Co. when it is marketed in the United States and acceptable advertising is issued; and (5) it voted to accept Ephedrine Sulphate-Lilly (formerly called "Fedrin") when the firm has achieved satisfactory standards and when the advertising is found acceptable. (*Jour. A. M. A.*, Feb. 12, 1927, p. 482.)

#### PERIODIC HEALTH EXAMINATIONS\*

ALBERT M. SNELL, M.D.†  
Rochester, Minnesota

The campaign for periodic examinations of supposedly healthy persons is one of the medical profession's more recent advances in the field of preventive medicine. Physicians in general are convinced of the necessity of such examinations, and of the truth of Richard Cabot's statement, that we are indifferent healers but good teachers in the art of living correctly. Intelligent laymen throughout the country have enthusiastically supported the profession in this campaign, and a number of organizations, chiefly insurance companies, have been engaged in active propaganda and advertising in its behalf. The problem before medical organizations at present is chiefly to arouse the interest of individual physicians, in order that health examinations will be made in a thorough and uniform manner.

It is a matter of common knowledge that there has been a steady decline in the death rate during the last century, although death from cancer and the degenerative diseases is on the increase. This decrease in the general death rate has been largely due to a reduction in mortality during the earlier years of life. The average expectation of life at birth is about twenty years more than it was a century ago. Census figures from practically all countries show that the expectancy of life at forty and fifty has increased very little; that is, there has been no material extension of life past middle age.

It is of great importance to consider just how much of the average person's life is passed in a state of good health. Statistics in regard to morbidity rates are not convincing; it is, however, generally recognized that the total economic loss from preventable illnesses is great. Owing to the keen competition encountered in every industry, and the increasing complexity of modern life, the period of active and efficient work for each individual is limited. The working span of life of most professional men is reduced first by the long edu-

\*Read before the Southern Minnesota Medical Association, Mankato, Minnesota, October 18, 1926.

†From the Division of Medicine, Mayo Clinic, and The Mayo Foundation, Rochester, Minnesota.

cational period, and later by the early onset of the degenerative diseases. It is believed that health examinations will provide a method by which the death rate may be further reduced and the active working life of the individual lengthened; it is practically conceded that the great economic waste from preventable diseases would be materially reduced at the same time.

The experience of both Great Britain and the United States during the late war has emphasized the fact that the general population is far below attainable standards of physical excellence. The statistics prepared by the draft boards of both countries have been widely published and discussed, and need not be repeated in detail. In this country about 34 per cent of drafted men between the ages of twenty-one and thirty-one were found unfit for active military service. In Great Britain the rejection rate at eighteen years was 22 per cent, at twenty-three 48 per cent, and at forty-one 69 per cent. Many of the defects which incapacitate a man for military service do not render him unfit for active engagement in industry; on the other hand, the examinations of drafted men were necessarily lacking in certain details, and many men who were accepted were subsequently discharged on account of disabilities which existed at the time of enlistment. The somewhat more complete examinations conducted by the Life Extension Institute since 1914 include a group of more than 350,000 persons, and show a high percentage of physical defects, the actual figures varying considerably in different classes of population. It seems certain that from 40 to 60 per cent of all persons have some physical impairment of sufficient importance to warrant hygienic guidance, medical supervision, or treatment; more than half of these physical impairments are remediable entirely or in part.

During 1914 and 1915 a number of policy holders of the Metropolitan Life Insurance Company were examined. A large number of physical defects were found and advice given. Five years later those examined showed a death rate which was 28 per cent lower than had been expected. The anticipated death rate of those between fifty and sixty years of age was reduced 53 per cent. These figures constitute a powerful argument in favor of

health examinations, and point clearly to the great reduction in mortality and morbidity rates which may be effected in this way. These figures are well known to the reading public and as a result there has been a great increase in the number of persons given annual medical examinations and advice.

The actual method of examination is, of course, a matter to be decided by the individual physician. It goes without saying that it should be systematic; a definite routine should be followed and complete records kept. The history in particular needs more attention than is usually given it, since careful questioning may bring to light symptoms of considerable moment. Specific inquiry should be made regarding the cardiovascular system, the gastrointestinal tract, and so forth. The occupational status of the patient, his habits, social life, and recreation are also of the greatest importance. On account of the time and expense entailed, laboratory studies should be reduced to a minimum; they should, however, suit the needs of the individual. In general it may be said that they constitute the least important part of the work, a thorough history and physical examination with a urinalysis sufficing in most instances.

The following outline is a modification of that used at the Mayo Clinic, and has the merits of simplicity and thoroughness. Very little apparatus is required and the whole examination should not require more than an hour.

#### HISTORY

Age                      Sex                      Civil State                      Ancestry  
Family history (noting familial tendencies to disease).

Previous diseases, injuries or operations.

Social history (occupation, and so forth).

Habits (including those of work, exercise, and so forth).

Marital history (in suitable cases).

Menstrual history (in suitable cases).

Present complaints (if any).

Physical examination:

1. Height, weight, and general appearance.
2. Structural defects, deformities, muscular development, and so forth.
3. Blood pressure, temperature and pulse (pulse before and after exercise).
4. Vision, pupillary reactions, and ophthalmoscopic examination, if practicable.

5. Nose, ears, oral cavity.
6. Neck (for goiter, lymph nodes, abnormal pulsation, and so forth).
7. Skin and appendages, lymph nodes, and so forth.
8. Lungs, heart, peripheral blood vessels, and abdomen.
9. Genitalia (including investigation for hernia).
10. Rectum and pelvis (in suitable cases).
11. Tendon reflexes, sensation, gait, and so forth.

Laboratory investigation:

Urinalysis.

Tallquist determination of hemoglobin.

Wassermann test (in selected cases).

Fluoroscopic examination of chest (in selected cases).

Further laboratory work as indicated in the individual case.

If the examination is to be made of maximal value to the patient, one must not concentrate all one's attention on an attempt to demonstrate pathologic changes. The proper functioning of the various systems must be borne in mind and deviations from the normal sought. In other words, the physician's major interest in these examinations should concern their physiologic rather than their pathologic significance. Lee has stated the exact purposes of health examinations in assigning to them a threefold object: "(1) the detection of organic pathologic changes, to be followed by the necessary measures for the correction, compensation, or control of the lesions discovered, as far as possible; (2) the detection of non-organic functional disturbances, to be followed by the necessary measures for the correction, compensation, or control of these disturbances, as far as possible; and (3) the evaluation and classification of each individual as an entity, to be followed by direction as to suitable future activities and by measures designed to better his classification and thereby improve his well-being and enlarge his potential activities."

The patient has only an academic interest in methods of examination, but is vitally concerned in the interpretation of the data obtained and the advice given. In short, he wishes to be told how to live properly, how to overcome his physical defects, and adjust him-

self to his disabilities. He also hopes to obtain information regarding the prevention of disease, particularly those conditions to which his occupation or habits may render him liable. In order to make these examinations of actual value to the patient we must consider not only his disabilities but the stresses and strains to which he is subjected in his particular environment. In this connection one must consider the general causes of disease, and wherein they may be operative in the individual case. The tabulation, a modification of one given by Fisk, is useful and may serve as a sort of yardstick to measure the hazards of any given patient.

TABULATION  
Causes of disease

1. Heredity
2. Infections
3. Poisons
  - a. Exogenous
  - b. Endogenous
4. Food deficiencies and excesses
5. Neoplasms
6. Endocrine disturbances
  - a. Hyperfunction
  - b. Hypofunction
  - c. Dysfunction
7. Physical trauma; physical apathy
8. Psychic trauma; psychic apathy.

In any large group of examinations one encounters certain types of patients who represent the extremes of biologic excellence and inferiority. The statement that all men are created equal is repeatedly contradicted in medicine; certain individuals reach a high stage of physical and psychic adaptability while others suffer from chronic inability to conform to their surroundings. The former are inclined to wear themselves out, and usually achieve success and physical disability coincidentally; the latter often drag through a long listless and futile existence and rust out from disuse. Between the two extremes every gradation may be found. In health examinations these biologic types must be recognized and advice given, with full appreciation of what might be termed the natural history of such individuals.

There are a number of common problems which present themselves to one who makes a number of examinations on supposedly healthy persons. The illustrative cases presented here



are group pictures of cases taken from the Mayo Clinic files.\*

*Case 1.*—C. H. Aged sixteen; male; high school student; American descent.

Family history: Negative.

Previous diseases: Always fairly well, scarlet fever at six, measles at five, tonsillectomy at twelve.

Habits: Sedentary; very little interest in athletics; leads his class in school. Does not use tobacco or drink coffee.

Complaints: None. Accompanied mother to Clinic. On questioning says that he tires easily and that his heart pounds on exertion.

*Physical examination:*

1. Height 5 feet 10 inches; weight 135 pounds.
2. Tall, slender lad, poor posture with stooped shoulders; muscular development fair.
3. Blood pressure 105 systolic and 70 diastolic; pulse 80, after exercise 110; temperature normal.
4. A few very small cervical lymph nodes; thyroid barely palpable.
5. Deflected nasal septum; vasomotor rhinitis; scarred right membrana tympani.
6. Narrow, flat chest; heart's apex 8 cm. from mid-sternal line; systolic murmur at apex, varying on change of position and not transmitted.
7. Right inguinal ring relaxed.

*Laboratory examinations:*

Urinalysis: Albumin, grade 2; no microscopic abnormalities.

Hemoglobin: 85 per cent.

Fluoroscopy of chest: Negative.

*Comment:* The principal points in Case 1 were the asthenia, poor posture, the cardiac murmur, and the albuminuria. On account of its variability the cardiac murmur was disregarded, especially since there was no history of cardiac disease, nor physical evidence of cardiac weakness. The albuminuria, on further examination, proved to be of the orthostatic type and related to the boy's poor posture and extreme lumbar lordosis. The parents were advised that the boy was underweight, underdeveloped and in need of systematic exercise and a general hardening process. After a year in a military school, with a vacation at a boys' camp, he had gained 18 pounds, the posture had improved greatly, the albuminuria had disappeared, and the cardiac murmur was audible only after vigorous exercise.

Albuminuria of variable degree occurs in about 5 per cent of the total population and in nearly 35 per cent of patients at the Mayo Clinic. Orthostatic albuminuria, while not of common occurrence, is not infrequently encountered. There is no reason to believe that it causes harm to the patient, although the question of loss of protein through the kidney must be considered as a possible cause of the asthenia of which these pa-

tients complain. On this account a high protein diet has been advocated as a therapeutic measure. Recently the blood proteins have been studied in functional albuminuria and found to be within normal limits. In many instances a suitable corset to correct faulty posture will cause marked decrease in the albuminuria. The administration of an alkali will also cause the disappearance of albumin in many instances.

*Case 2.*—R. G. Aged thirty-one; male; real estate salesman working in Florida; Scotch-Irish descent.

Family history: Mother died from tuberculosis; father living and well.

Previous diseases: Influenza in 1918.

Marital history: Wife and two children living and well.

Habits: Addiction to tobacco, grade 3, to coffee, grade 2, and to alcohol to excess occasionally. Does a great deal of night work, and has heavy responsibilities. Plays a little golf; is rather proud of the fact that he has had no adequate vacation in two and a half years.

Complaints: None other than insomnia and irritability; occasional headaches. Came to the Clinic with his wife.

*Physical examination:*

1. Height 5 feet 8 inches; weight 150 pounds. Patient nervous and irritable throughout examination.
2. Muscular development and posture good.
3. Blood pressure 110 systolic and 75 diastolic; pulse 78, after exercise 98; temperature normal.
4. Tonsils contain plugs of cheesy material.
5. Vision 6/10 in both eyes; definite hyperopic astigmatism.
6. Left chest smaller than right and deficient in expansion; increased breath sounds at left apex.

*Laboratory examinations:*

Urinalysis: Negative.

Blood count: Normal.

Roentgenogram of chest: Old healed tuberculosis of upper portion of left lung.

*Comment:* This patient was in fair health at the time of his examination but he had two definite dangers with which to contend. The first and most important had to do with his occupation. He had been uncommonly successful at his work and was receiving a good salary. This was accomplished, however, by prolonged and continuous work of the "high pressure" variety. He had denied himself recreation and vacations, and put in longer hours to earn extra commissions. The late hours, alcohol, and tobacco were also incidental to his work. With a family history of tuberculosis and evidence of an old process in his chest, advice to lead a less strenuous existence was doubly important. The relation of eye strain to his headaches was explained and refraction advised.

The patient wrote six months later to say that he was working six hours a day, and earning fully as much as before. He had taken a month's vacation and was playing golf regularly. His general health had

\*Only information of first importance and positive physical findings are given.

improved and the insomnia and irritability had disappeared.

*Case 3.*—Mrs. M. Aged forty-five; housewife; German descent.

Family history: Parents dead; one sister at the Clinic with papillary cystadenoma of ovary.

Previous diseases: Influenza in 1919; usual infectious diseases of childhood.

Marital history: Husband and four children living and well.

Menstrual history: Normal until last two years; since then moderate leukorrhea and slight increase in menstrual flow; no metrorrhagia.

Habits: Husband a farmer; patient works hard, with little opportunity for recreation.

Complaints: Wishes a physical examination principally because of fear of cancer. Chronically constipated; tired out much of the time.

*Physical examination:*

1. Height 5 feet 3 inches; weight 115 pounds.

2. Asthenic woman; looks older than forty-five.

3. Blood pressure 130 systolic and 80 diastolic; pulse 84; temperature normal.

4. Tonsils inflamed, grade 2; nothing expressed. One abscessed tooth with draining sinus at gum margin; three others devitalized.

5. Small adenoma of right lobe of thyroid.

6. Heart and lungs normal; no peripheral sclerosis.

7. Abdomen relaxed with diastasis recti; descending colon and right kidney palpable.

8. Moderate perineal relaxation. Cystocele, grade 2. Uterus one and one-half times normal size with small fibromyoma in fundus. Cervix transversely lacerated, with mild cystic cervicitis.

*Laboratory examinations:*

Urinalysis: Negative.

Blood Wassermann test: Negative.

Hemoglobin: 70 per cent. Erythrocytes: 3,800,000.

*Comment:* This patient presented three problems, the first and most important of which was her fear of cancer. This had been exaggerated by her sister's illness, and by the death of a friend from carcinoma of the stomach. Roentgenograms of the stomach and colon were made, principally to reassure the patient. The fibromyoma of the uterus and other pelvic abnormalities are worthy of attention. It was quite safe for her to forego treatment at the time, since she was at the menopause and might reasonably expect to be relieved of her few pelvic complaints once menstruation had ceased. She was advised to be reexamined frequently and to return for treatment if there was any definite increase in menstrual flow or intermenstrual bleeding.

Dental sepsis present in this case was apparently causing no symptoms, but extraction of the infected teeth was advised as a prophylactic measure. A high-calorie, anticonstipation diet, rich in fat, was prescribed, and she was urged to reduce her domestic duties as much as possible.

Eighteen months later the patient reported that she had not menstruated for seven months and that her physician could detect no further enlargement of the

uterus. She had gained 5 pounds in weight and the constipation was considerably improved.

*Case 4.*—R. R. S. Aged forty-eight; male; railroad executive; American descent.

Family history: Father died from apoplexy; mother died from diabetic gangrene.

Previous diseases: None of importance.

Marital history: Wife and one child living and well.

Habits: Strenuous life with many responsibilities; moderately addicted to alcohol and tobacco; plays a good deal of golf for considerable stakes; has regular vacations, usually spent fishing and hunting.

Complaints: None, save slight shortness of breath on exertion and vertigo occasionally.

*Physical examination:*

1. Height 5 feet 7 inches; weight 215 pounds; ruddy complexion; healthy appearance.

2. Moderate pes planus; slight fixation of the lumbar spine.

3. Blood pressure 160 systolic and 100 diastolic; pulse 90 with slight increase after exercise.

4. Definite evidence of arcus senilis; ophthalmoscopic examination shows mild fibrosis of the retinal arteries, of the hypertension type.

5. Two devitalized teeth; tonsils reddened and contain plugs.

6. Heart somewhat enlarged to the left; short systolic murmur over second right interspace; aortic second sound slightly accentuated; slight but definite peripheral arteriosclerosis; abdomen obese; descending colon palpable.

7. A few external hemorrhoids; prostate firm and slightly enlarged.

*Laboratory examinations:*

Urinalysis: Trace of albumin and rare hyaline casts.

Blood count: Normal.

Roentgenogram of chest: Negative.

Wassermann test: Negative.

*Comment:* This man represents a typical business executive showing the first evidences of cardiovascular renal disease. Dyspnea and vertigo even if slight are of great importance in such a case. He was advised to remain for complete investigation of cardiac and renal function, and incidentally he was given Osler's remarks to read on the advantages of a man having a trace of albumin and a few tube casts at the age of fifty. There were no significant findings on further examination; he was advised to reduce his activities 25 per cent, to take nine hours of regular sleep and a noonday rest, and to engage in somewhat less strenuous recreation. Frequent vacations were insisted on. An anticonstipation diet containing 1800 calories was ordered, and the devitalized teeth and tonsils removed as an additional safeguard.

When last seen he had reduced his weight 20 pounds, the systolic blood pressure was 140 and the diastolic 90; reexamination of renal and cardiac function was negative. He is arranging his work in such a way as to give him further opportunity for relaxation, and states that he feels perfectly well.

Our most careful attention should be given to patients forty or more years of age, since it has

been stated that little or no progress has been made in the extension of life expectancy in this group. With cancer and the degenerative diseases on the increase, these older persons call for a painstaking examination as well as careful and detailed advice in regard to general hygiene. When degenerative disease is present, its recognition may mean ten more years of life to a patient. A great opportunity for study of the early symptoms and signs of cardiac, vascular and renal disease presents itself in these cases; carefully kept records of annual examinations may furnish much data of value, and etiologic factors of importance may be discovered. It has been said in objection to periodic health examinations that there is no way in which angina pectoris may be detected at an early stage, and that other degenerative diseases are almost as elusive. The attempt should be made, nevertheless, and these persons given the benefit of such knowledge as we have. Prophylaxis is, however, the important thing to be kept in mind. As Emerson says, our attack on the degenerative diseases is by definite reform of the individuals of today and by the education of the citizens of tomorrow.

The rôle of the endocrine glands in the maintenance of health has been made the subject of much speculation. Unfortunately, the fanciful side of this speculation has greatly overbalanced any serious work which has been done on the subject. Profound changes in the endocrines occur after forty. Just why the cessation of reproductive functions in both sexes is attended with so many disorders is one of the mysteries of medicine. The obesity which so frequently develops at this time is only one expression of widespread metabolic disturbance. The physician's task of prolonging life will be greatly facilitated by new developments in this field.

There is much evidence for the conception that senility in general, and degenerative change in

the various organs in particular, are largely a matter of blood supply. Brown's excellent work on capillary measurements at the various decades of life is most instructive in this connection. Krogh has shown that the efficient contraction of a muscle depends, to some extent at least, on its capillary circulation, and that only sufficient capillaries are open at any one time to supply the necessary amount of blood. Wearn has found that this may be true of heart muscle as well. In other words, the reserve strength of organs may lie in the number and diameter of available capillaries. Growing old may well be largely a question of failing capillary or arteriolar blood supply.

Such work as this should be applied to our clinical management of older patients. The periodic health examination of the future may include capillary measurements, estimations of the rate and volume of blood flow, and other methods which are as yet confined to the laboratory. In the meantime clinical data are sadly lacking, especially in the earlier stage of vascular disease. Health examinations may thus be made of service to medical science as well as to the individual.

There is evidently increasing interest on the part of the public in matters of public and personal health. The medical profession can do much to increase this interest through the medium of periodic health examinations. The physician can on these occasions direct the patient's attention to the dangers of quackery and pseudoscience. He can advise the patient regarding the sources of authentic information on hygiene and so divert his reading from "Physical Culture" to "Hygeia." A few neurotic persons, overinformed regarding problems of health, will tax one's patience, but in return one will reach and assist in educating a large group of the people who would otherwise take no interest in the matters of hygiene. These examinations offer an opportunity to obtain a larger share of public confidence than has heretofore been enjoyed.

#### CLEARWATER'S RHEUMATIC TREATMENT

In the village of Hallowell, Maine, there has been conducted for some years a piece of mail-order quackery by one H. P. Clearwater, a man without medical training. Clearwater has a somewhat extensive line of nostrums, some of which are sold exclusively on the mail-order plan, while in the sale of others, Clearwater splits profits with drug stores. Clearwater's

mail-order activities are mainly with his alleged cure for rheumatism, "Clearwater's Scientific Rheumatic Treatment." From an analysis made in the A. M. A. Chemical Laboratory it appears that the "treatment" consists of two kinds of laxative tablets, one of which has in addition: sodium iodide 1/3 grain and sodium carbonate 5 grains per tablet. (Jour. A. M. A. Dec. 18, 1926, p. 2112.)

## OSTEITIS FIBROSA CYSTICA\*

## Report of a Case

WALTER H. UDE, M.D.

Minneapolis

Osteitis Fibrosa Cystica was first described as a definite disease entity in 1891 by von Recklinghausen. His report included three cases of generalized bone involvement. Five years previously Hirschberg described the same condition, but he was under the impression that it was a form of osteomalacia.

Complete review of the literature in 1922 by Morton revealed sixty-three authentic cases of the generalized form of this disease. An additional case was reported by him at that time, and six other cases were reported by Sisk in 1925. The literature has not been reviewed recently so that the actual number now on record has not been determined.

The case herewith reported is of interest because it necessitates a very interesting differential diagnosis from osteitis deformans (Paget's Disease), and adds support to the correlation of the two diseases as advocated by Knaggs in 1925.

## CASE REPORT

Miss E. D., white, aged 46, an office clerk, had had scarlet fever, measles, and diphtheria as a child. At the age of eighteen she had an attack of lobar pneumonia. She has always been strong and healthy, athletically inclined, and during her younger years was a gymnast. Her menstrual history had always been normal, and there is no evidence of endocrine disturbance.

On May 9, 1917, following the slight, sudden exertion of reaching for a child to prevent it from falling, her left forearm became limp and somewhat numb, with loss of function. There was pain only on twisting the arm. No previous abnormality of the arm had been noted. A roentgen plate at this time revealed a cystic area involving the distal two-thirds of the left ulna, with a transverse fracture through this area. Treatment at this time consisted of surgical exposure and curettement. A gelatinous substance with some fibrous tissue was removed, which the pathology department of the University of Minnesota reported as simple fibrous tissue with no evidence of malignancy.

The patient was able to resume her work as stenographer and typist in August, 1917, there being no disability. In October, 1921, roentgen examination revealed a recurrence of the cystic condition, and surgical interference was again deemed advisable, this consisting in radical curettement and the application of radium.

Recovery was again uneventful but the arm was left weakened, so that she was forced to change her occupation to that of file clerk.

In January, 1922, roentgen examination of the arm accidentally included the left hand, and revealed a marked degree of rarefaction in the carpal bones, and a definite cystic condition of the fifth metacarpal.

In March, 1922, the patient sustained an injury to her right hip by falling. No fracture could be demonstrated at this time, but it was noted that the entire pelvis and the proximal ends of both femora showed marked bony change. Following this the patient remained in good health and continued in her work as file clerk. In addition she has been helping with the work in her home, has been doing canoeing, swimming, hiking and recently even some bowling. She has never felt any discomfort, muscle pains or abnormal fatigue following any of these exercises except with the bowling, when she occasionally noticed pain in the hip muscles.

March 24, 1926, the patient slipped while stepping out of a car. She fell to the ground and struck on her left buttock and left elbow. Roentgen examination revealed a fracture of the olecranon process, of the fifth left metacarpal bone, and a longitudinal fracture through the left wing of the sacrum.

The physical examination at this time revealed no important abnormalities except those associated with the fractures. There is no noticeable bowing of the lower extremities, and no deformities except the operative scars on the left forearm. Laboratory study has been negative except a faint trace of albumen in the urine.

The fracture of the olecranon process was treated by open reduction with good union resulting. After several weeks of rest in bed the patient was able to return to her position and to her other activities, but is following advice to refrain from muscular exertion.

Roentgenograms were made of practically the entire skeleton, with the following findings:

1. *Skull*—There is a large area of marked rarefaction occupying practically the entire left frontal region. The remainder of the skull shows diffuse areas of decreased density of lesser extent. There is no thickening of the skull, no abnormal enlargement of the circumference, no periosteal change.

2. *Vertebral Column*—The bodies of the thoracic and upper lumbar vertebrae present a striated appearance, a combination of condensation and rarefaction, with some slight evidence of compression of the bodies. The findings here would strongly simulate those of Paget's disease.

3. *Pelvis*—The entire pelvic girdle is involved with a dense network of striations, interspersed with areas of rarefaction, but no definite cyst formation. There is a moderate pressure deformity of the pelvis. The sacrum shows a longitudinal fracture through the region of the left intervertebral foramina, without separation or displacement.

4. *Lower Extremities*—The proximal halves of both femora have the same fibro-sclerotic appearance as the pelvis, with a marked widening of the diameter of the shaft, a marked thickening of the cortex, partial obliteration of the medullary cavity, but also definite areas

\*Read before meeting of Minneapolis Clinical Association, Nov. 2, 1926.



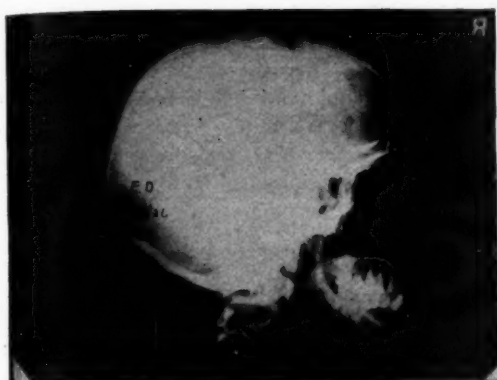


Fig. 1. Skull, showing large area of rarefaction in frontal bone.

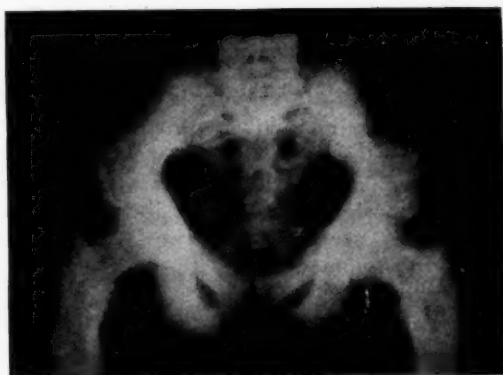


Fig. 2. Pelvis and femora, showing marked fibro-sclerosis.

of cyst formation. The greater trochanter of the right femur shows evidence of an old chip fracture, presumably dating to the injury in 1922. There is a slight degree of coxa vara, but no bowing deformity of the shaft. The remaining portions of the lower extremities are normal.

5. *Upper Extremities*—The left humerus shows a solitary ovoid cyst in its midportion, but otherwise is entirely normal. The left ulna in its proximal end shows marked rarefaction with fracture of the olecranon process. The shaft shows extensive destruction of its distal two-thirds, practically only a shell of it remaining. The earlier plates are available to show the primary condition. These show a unilocular rarefaction of the distal two-thirds of the ulna with marked thinning of the cortex and only slight fusiform expansion of the shaft. The early fracture is also shown. The left carpal and metacarpal bones show moderate osteoporosis, probably a result of disuse. The diameter of the fifth left metacarpal bone is almost double that of the normal, with extensive, honeycombed cystic degeneration, and marked thinning of the cortex. The right

upper extremity shows no abnormality. The thorax is normal.

From these roentgen studies it appears that we are here dealing with a case which has certain characteristics of osteitis deformans or Paget's disease, combined with cystic phenomena and a clinical picture which tend to place it definitely into the disease entity of osteitis fibrosa cystica of the generalized type.

In his Hunterian lecture in 1925 before the Royal College of Surgeons, Knaggs makes a thorough analysis of osteitis deformans and its relation to osteitis fibrosa and osteomalacia. He found a close resemblance in their microscopic pathology, and considers their essential characteristics to be the same, any detectable difference being only a matter of degree. The exciting agent of all these diseases is a toxin of unknown origin, producing different effects



Fig. 3. Large cyst of left ulna, with pathologic fracture, the first clinical evidence of the systemic condition, May 9, 1917.

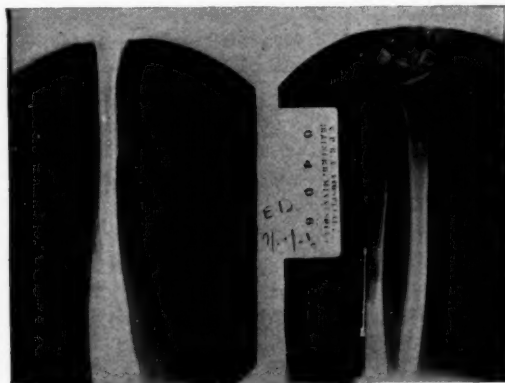


Fig. 4. Same as Figure 3, four years later, showing only moderate extension.

on the various constituents of the bone. The osseous framework or cortex is depressed and damaged beyond repair, while the connective tissue of the bone marrow is stimulated and changed into an actively growing, vascular connective tissue which invades the damaged cortex, breaks it up and absorbs it, and by laying down calcium in its own fibrils and cells produces a new bony framework. This process is a continuous one, with ossification predominating over resorption, especially in osteitis deformans. Certain features of this latter disease tend to show that it constitutes a less serious affection of the bones than in osteitis fibrosa, there being a greater ability of the bones to resist toxic influence. The relative intensity of this resistance can be roughly gauged by the extent and character of the reaction excited in the soft tissues of the affected bones. If the vitality is good, the resistance opposed to the toxins may ward off harmful effects until the constitutional strength is reduced by age and disease. The reaction under these circumstances is strong, and the resulting affection takes the form of osteitis deformans. On the other hand, if vitality is feeble, the disease appears earlier in childhood, adolescence, or early adult life. The reaction is fair, but not so vigorous as in osteitis deformans, and the form of the disease then assumes that of osteitis fibrosa. Lastly, when owing to the severe depression of the patient's vitality, usually by untoward circumstances, the power to react is absent, osteomalacia develops. This, in short, is Knaggs' argument, based on very thorough pathologic study. It is apparent that in it lies a solution for the difficulties which we meet in roentgenologic differentiation of these diseases. Witness the case herewith presented: The appearance of the pelvis in this case would lead one to the conclusion that this is a classical case of osteitis deformans; the appearance of the spine and the femora also would support such a conclusion, and one would ask for a roentgenogram of the skull merely to substantiate the diagnosis. This, however, presents no signs of the typical massive enlargement, the thickening of the cranial tables, or of the well-known "nigger-wool" appearance. In its place

we have the single large area of rarefaction, and some diffuse rarefaction in the remainder of the skull. Then the cystic degeneration in the left arm and hand definitely brings the case into the cystica group. Apparently this patient has a fairly high resistance to whatever constitutes the etiological factor, since her condition did not become apparent until she was near the age period which we associate with Paget's disease. This would account for the fact that so many of her findings simulate this disease. It may be prognosticated that she will continue in comparatively good physical health until her resistance will be reduced by advancing age, with the result that she may gradually develop other pathological fractures, deformities of pelvis and lower extremities, and increasing general debility. It will be of interest to observe whether further bony changes will assume the nature of Paget's or of von Recklinghausen's disease.

Another case which I found in the records of the Minneapolis General Hospital shows a similar puzzling appearance. This was a male, aged 63, who was admitted to the hospital in a debilitated condition. The physical examination revealed a typical Paget's disease. In the roentgenographs the pelvis and some of the long bones show a marked cystic degeneration, while the skull shows the patchy sclerosis, the generalized enlargement, and the marked thickening of the cranial vault, appearances which we are accustomed to consider an absolutely diagnostic picture of Paget's disease. This patient died several weeks after he came under observation, from an intercurrent pneumonia, so that further observations are not available.

The association of the roentgenologic characteristics of these two diseases was also briefly commented on by Knaggs, and has been mentioned by other authors. The case herewith reported adds substantiation to the theory of their close relationship.

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## THE EVOLUTION OF NEPHRITIS: ITS PROGNOSIS AND TREATMENT\*

## Part II

## PROGNOSIS IN NEPHRITIS

HUGO O. ALTNOW, M.D.  
Minneapolis

In speaking of prognosis in nephritis, the author of a well known textbook on the practice of medicine which was published ten or more years ago, made the statement that the nephritic patient either did better or worse than you expected him to do. This is equivalent to saying that it is difficult to make an accurate prognosis in nephritis. This statement was made prior to the advent of blood chemistry and renal function studies, but if it were necessary to limit oneself to the methods of examination employed twenty years ago, it would still be true. Moreover, the inference that an accurate prognosis in nephritis is easily made is as yet not justified, even with precise laboratory control.

Since there are several factors to be considered in prognosis in nephritis which must necessarily be discussed together, for the sake of clearness and easy reference I shall first enumerate them in the accompanying table:

## ELEMENTS TO BE CONSIDERED IN THE PROGNOSIS OF NEPHRITIS

1. Presence and absence of edema.
2. Albuminuria.
3. The extent and activity of renal degeneration.
4. Blood pressure.
5. Phenolsulphonephthalein output.
6. Level of nitrogen retention.
7. Anemia.
8. Condition of the cardiovascular system.
9. Fundus changes.

The presence of edema, even if extensive, does not indicate a poor prognosis in acute nephritis. Under proper management the edema often disappears rapidly. Many nephritic patients with marked edema have surprisingly good and often entirely normal dye and nitrogen function. However, persistence of marked edema in subacute nephritis, especially in a well managed patient, means a severe renal lesion and does indicate an

unfavorable outcome. A patient with marked edema does not always progress to and die of renal insufficiency, but he has a noteworthy lack of resistance to infection and often succumbs to intercurrent disease, particularly influenza, pneumonia and pneumococcus infection of the lung and serous cavities. Other infections, such as tonsillitis, infections of the throat, sinus infections, carbuncles, streptococcus and staphylococcus infections should receive the same serious consideration in nephritis as in diabetes. The progress of nephritis is often unduly hastened by the presence of these infections.

The disappearance of edema in subacute nephritis, as already mentioned in a previous article,<sup>1</sup> may even render the outlook more serious as it may disappear coincident with the appearance of renal insufficiency.

Prior to our present knowledge of kidney function, as revealed by functional tests, the estimate of the severity of nephritis was largely based on edema and the amount of albuminuria and persistence of casts in the urine. Now the presence of albuminuria has more of a diagnostic than a prognostic significance. To illustrate the pitfalls that one may be led into in judging the severity of nephritis by the albuminuria, I shall cite two widely contrasted cases from my experience. The first was seen in February 1922, and was reported at the meeting of the North Dakota State Medical Association at Grand Forks in June 1922. The other is one of my present cases. I have accurate notes of only the laboratory findings and blood pressure determination in the first case and must rely largely on memory for the history and physical examination.

*Case 1.*—Clinical History. The patient, an unmarried farmer forty-six years of age, was seen for the first time on February 17, 1922. There was no history of any serious illness. During the past six months his appetite and digestion had been poor and he had lost some weight. For the last three to four weeks he had increasing nervousness and insomnia, and was unable to do his farm work because of lack of strength and exhaustion. The last week or ten days he had cramping in the muscles of his legs and forearms at night.

Physical Examination. Except for the patient's being undernourished and having poor teeth with advanced pyorrhea, I have no recollection of the findings in the physical examination. The systolic blood pressure was 168, the diastolic 94. Chronic nephritis was suspected, and a phthalein test was done that day which showed 5 per cent the first hour and 0 per cent the second hour. Urine specimen showed specific

\*From the Medical Division of the Nicollet Clinic, Minneapolis.

gravity 1007, albumin  $\pm$ , a few white blood cells and no casts. The patient was advised to enter the hospital, which he did on February 21, 1922. The phthalein test was repeated on the day of admission, with 0 per cent in three hours.

On February 22 the patient was given the Mosenthal kidney test diet, which furnished the following data: the two hour day specimens showed variation in specific gravity from 1008 to 1010. The volume of the total day specimen was 1,405 c.c. The specific gravity of the night specimen was 1011 and the total volume of the night specimen was 1,125 c.c. The total twenty-four hour intake was 1,760 c.c. and the total twenty-four hour output 2,530 c.c. The patient therefore had a minus fluid balance of 770 c.c.

Fixation of secretion was also present and two hour specimens only varied in quantity from 210 to 256 c.c.

February 23, 1922. Urine, twenty-four hour specimen, 1,350 c.c., specific gravity 1006, albumin  $\pm$  sediment negative.

February 24, 1922. Blood pressure 149/92. Urine, twenty-four hour specimen 750 c.c., specific gravity 1010, albumin  $\pm$ .

February 25, 1922. Blood pressure 168/92. Urine, twenty-four hour specimen 1,500 c.c., specific gravity 1011, albumin  $\pm$ , sediment negative.

February 27, 1922. Urine, twenty-four hour specimen 1,740 c.c., specific gravity 1010, albumin  $\pm$ , sediment negative.

March 1, 1922. Blood pressure 164/94. Urine 1,440 c.c., specific gravity 1011, albumin  $\pm$ , sediment negative.

March 2, 1922. For the last twenty-four hours the patient vomited everything, including water. Air hunger and picture of terminal acidosis were present.

March 3, 1922. For the last twenty-four hours the urine contained macroscopic and microscopic fresh blood. The patient was in coma and died at 8:00 A. M.

**Comment.** On February 23, 1922, on the basis of the two phthalein tests and the Mosenthal test, a grave prognosis was given to the patient's relatives. The absence of even a few hyaline casts and the presence of a very small amount of albumin in the urine was rather remarkable and may have been due in part to the fact that the patient was secreting an alkaline urine, which may have brought about a disappearance of the casts, but my present notes furnish no information on this point. The bloody urine shortly before exitus was most probably caused by extensive thrombosis in the glomerular and renal vascular supply. Even without autopsy findings, I believe that it is safe to assume that the patient died of renal insufficiency due to chronic nephritis. There was at no time anything to suggest prostatic obstruction.

**Case 2.**—The second case, offered by way of contrast, is as follows: the patient is a male student,

thirty-two years of age. His present complaint is only that of albumin in the urine.

The family history shows that his father died of pulmonary tuberculosis at the age of fifty-seven. His mother died at the age of sixty-eight of hypertension and cardiac failure. One brother is living and has tuberculosis. Otherwise the family history is not noteworthy.

**Present History.** The patient was more or less a physical weakling up to the age of thirteen. He had a severe attack of measles at the age of seven. He was always subject to bronchial infections and in the winter of 1906-1907 he had severe diphtheria with a cardiac complication. Late in the fall of 1909 he was found to have albuminuria. His tonsils were removed in 1919 and he has had more sore throat since that time than before. He is a medical student and he therefore recognizes his abnormal kidney condition. He has always taken good care of himself.

The patient considers himself well, except that he has albuminuria and notices that he is more knocked out by any dissipation than a healthy man. Before beginning his University course, he worked as a male nurse and did not notice any unusual fatigue. He has had some headaches this fall and believes them due to faulty refraction. He has had no nausea, vomiting or edema. Nycturia is present only when he drinks fluids freely. He says that he has some pain in the chest following unusual exertion.

**Physical Examination.** The patient is a man of sthenic habitus, 66 inches tall, weighing 154.5 pounds. He is well nourished and his complexion is florid. His temperature is 98.0, his pulse 86 and his blood pressure 166/114. (The patient states that his usual blood pressure is about 155/110.) His eyes show beginning arcus senilis and are prominent. His teeth are all vital. His tonsils have been well removed. There are a few scattered râles in the lower right lung, but he has had a recent cold. Examination of the heart reveals supracardiac dullness 6 cm.; right border 3 cm.; apex and left border 10 cm. in fourth intercostal space. There is a diastolic murmur to left and right of the sternum.  $A_2$  is accentuated. He has marked brachial and radial arteriosclerosis for his age. Fluoroscopic examination of the chest shows the lung fields to be normal except for increased density in hili. The aorta is moderately widened and tortuous. The heart shows moderate left ventricular hypertrophy ("wooden shoe" type). The fundus shows an extensive chorio-retinitis and because of this and a refractive error, examination of the retinal vessels was unsatisfactory.

Clinical laboratory examinations during the period that the patient was under observation showed the results tabulated in the accompanying table.

February 12, 1916. Phthalein 40 per cent in two hours ten minutes. Blood sugar .08 per cent. Blood urea nitrogen 13 mgm. per 100 c.c. Hemoglobin 89 per cent; red blood cells 5,160,000; white blood cells 7,550. Wassermann, negative (March 26, 1926).

The findings in this patient are so unusual that I believe they deserve to be placed on record. The outstanding feature is that so far as the patient knows, he has had constant albuminuria for seventeen years.



## URINARY EXAMINATIONS

Date	Reaction	Sp. G.	Albumin	Sugar	Sediment
2/9/26	Acid	1016	++++	0	Rare white blood cells and red blood cells. Moderate number of hyaline casts with fine brown granules and few with fat globules.
2/12/26 Day 1,200 c.c.	Acid	1018	++++	0	Occasional white blood cells and red blood cells. Many hyaline casts with fine brown granules. Few brown granular and rare leucocytic casts.
Night 180 c.c.	Acid	1026	++++	Trace	Sediment same as above except brown granular casts more numerous.
2/20/26	Acid	1019	+++	0	Rare white blood cells. Numerous hyaline casts with fine brown granules.
3/25/26	Acid	1018	+++	0	Rare white blood cells. Numerous hyaline casts with fine brown granules. Rare brown granular and cellular casts.

He was fifteen years old at the time that it was discovered and knows that for several years repeated urine examinations showed albumin a constant finding. When about twenty years of age he took up the profession of nursing and during this period and throughout his medical course he examined his own urine and states that albumin was always present in a large amount. The constant albuminuria has not caused any impairment in health or physical efficiency. There is nothing about his appearance to suggest nephritis; on the contrary, he is the picture of health. Even with a constant loss of albumin, his blood picture has remained entirely normal.

The same quantity of albumin in both day and night specimens rules out any orthostatic element, as does also the sediment. The large amount of albumin with the preponderance of the one type of cast (hyaline with fine brown granules) and occasional fat droplets and almost complete absence of cellular elements indicate that the renal lesion is a nephrosis type. In this connection the absence of edema is rather remarkable.

The 40 per cent phthalein, while it is the lower limit of normal, is not entirely satisfactory, and, together with his hypertension, means some glomerular involvement with a tendency to slightly impaired renal function.

We expected to repeat this test in a few months, but the patient did not return for further observation.

Taking into consideration the outcome of the two cases just cited, it is apparent that it is dangerous to come to any prognostic conclusion based only on the presence of albumin in the nephritic patient. In addition to the last case cited, I have observed several other patients with marked constant albuminuria of three to five years' duration who still have normal renal function and who are able to follow their vocations without being seriously handicapped by their renal lesion. I am convinced, therefore, that a serious prognosis in nephritis should never be given on the presence of albumin alone.

The activity of the renal degeneration is also not an index to the outcome of nephritis. While the lesion is still active and abundant casts (especially the active types, cellular and brown granular) and cellular elements are present in the sediment, there is still a probability of cessation of the degenerative process with no impairment of renal function. It is also possible to have an active degenerative process with moderate reduction of renal function, with improvement in the latter as the degenerative process subsides. If we could see the kidney at this stage we should in all probability see it before secondary contraction or sclerosis has taken place, while a kidney in which the degenerative process has ceased and function shows marked impairment, is usually small, contracted and greatly sclerosed. Therefore, while abundant albumin and the acute degenerative types of casts are still present, there is still a possibility of eventual recovery if the renal function is only slightly impaired. I can perhaps bring this out more clearly by stating a hypothetical case. If a patient comes to you and you find the phthalein to be 20 per cent and the blood urea nitrogen 30 mgm., it is much better for the patient's future outlook to have abundant albumin, degenerative casts and cellular elements in his urine than to have a small amount of albumin and only a few or a moderate number of hyaline casts. These statements bring out a viewpoint which is a direct contradiction to the interpretation placed on urinary findings by many practitioners; but anyone who carefully follows through the course of a number of nephritis patients will be convinced of the truth and significance of these statements with regard to prognosis.

Very little need be said concerning blood pressure and prognosis in nephritis, except that a persistent and rising blood pressure indicates a grave outcome.

The phenolsulphonephthalein excretion and the level of nitrogen retention may be considered together in determining prognosis. We shall speak only of the blood urea nitrogen level in nitrogen retention. The use of the blood urea nitrogen and the non-protein nitrogen is largely a matter of choice.

The repeated determination of the phthalein output and the blood urea nitrogen in the blood plasma reveals a very close relationship. As the former comes down, the latter rises. This has already been more fully commented upon under Part I, "Renal Function and the Evolution of Nephritis." Experience supports the general statement that when the phthalein output is below 10 per cent and the blood urea nitrogen is in the 50's, it is unusual for the patient to outlive a period of one year. There are, however, numerous exceptions to this rule. O'Hare<sup>3</sup> reports two cases, one a woman who lived for three years with a phthalein that varied from 0 to 18 per cent with a blood urea nitrogen four to five times above the normal figure. About eight months before death she survived an attack of uremia in which the blood urea nitrogen reached 168 mgm. From that time on she lived with an 0 phthalein. A second case lived for a period of five years with a phthalein which was never above 14 per cent and which was usually closer to zero.

Blood creatinine has come in for considerable attention in the prognosis of nephritis. A blood creatinine value above 5 mg. is generally regarded as a bad prognostic sign.

Walker,<sup>4</sup> in analyzing the data of thirty-eight cases in the Medical Clinic of the Peter Bent Brigham Hospital, found that patients with high blood creatinine occasionally outlive their expectancy and that the clinical condition of the patient, together with the phthalein and blood urea nitrogen determinations, furnishes as much information as does creatinine. Christian and O'Hare<sup>4</sup> cite one case of acute nephritis with a blood creatinine of 19 mgm. which recovered.

My purpose in dwelling on these exceptional cases is to lay emphasis on the fact that great caution should be exercised in making laboratory prognosis too definite.

I shall not comment upon anemia in the prognosis of nephritis, except to mention that in acute nephritis with edema the patient may be exceedingly pale and yet have very little anemia. In other words, the anemia is more apparent than real. In renal insufficiency, as Brown and Roth<sup>5</sup> have pointed out, the degree of anemia closely parallels nitrogen retention and a progressive anemia is a poor prognostic sign. Their analysis of cases at the Mayo Clinic shows that the mortality rate in patients with nephritis with renal insufficiency and moderate anemia (hemoglobin 50 to 70 per cent), within a period of two and a half years, was 46 per cent. In the group with severe anemia (hemoglobin below 50 per cent) the mortality rate was 85 per cent for the same period.

The anemia is due to decreased red blood cell production because of depression of the bone marrow by the retained toxic nitrogenous products. There may, however, be a nutritional element in it.

With reference to the cardiovascular system and prognosis, nothing more need be mentioned, except that many patients with chronic nephritis die of cerebral hemorrhage or cardiac defeat before they die of their nephritis. In this feature in prognosis it is a matter of conjecture and judgment as to how long the heart will hold out in the face of a diseased vascular system, the deleterious influence of the toxic substances on its myocardial muscle and the inadequate coronary blood supply.

So much first-hand information may be obtained by frequent eyeground examinations that anyone who follows with interest the vascular, cardiac and renal disorders should include the use of the ophthalmoscope in making physical examinations. In nephritis the fundi should be routinely examined every time the functional tests are repeated. I shall limit myself to only a few general statements concerning eyeground findings and prognosis.

The presence of bilateral papilloedema, retinal edema and albuminuric retinitis with marked sclerosis of the retinal vessels occurring in the course of chronic nephritis, is a finding of grave prognostic import. Patients showing these changes have an associated advanced vascular disease and usually die within a year. However, one case of chronic nephritis examined by Dr. O'Hare and myself, having an acute exacerba-

tion with a fairly extensive albuminuric retinitis consisting of "powdery" white spots, irregular "hard" white spots and partial fan formation, showed an almost complete disappearance of these spots nine months later. The fact that he was a badly managed nephritic patient when he came under our care and followed a well regulated regime during the nine months that he was under observation, may have had much to do with the clearing of his retinae. When last seen by me, in June 1925, his renal condition was such as to still permit his living for several years.

If in addition to the findings enumerated above, the soft white or "cotton wool" spots occur in profusion, it usually means that a marked toxic element exists in the nephritis and under these conditions a serious and complete breakdown of renal function is imminent. In acute and subacute nephritis, marked eyeground changes are conspicuous by their absence; but when they are present they add serious aspect to the severity of the nephritis. As a word of caution to beginners in eyeground examinations, I wish to state that the fundus changes that have been discussed are not *prima facie* evidence that nephritis exists. The same changes may be produced by advanced vascular hypertension.

Hemorrhages, even when extensive, are more

in the nature of accidental findings, and have no definite prognostic significance.

From the above discussion, it follows that the prognosis in nephritis is beset with uncertainties and there are many opportunities to fall into error and to make unguarded statements. All the features that the individual case presents must be carefully considered and evaluated before the clinician should permit himself to make any definite statement regarding the duration of life or the possible outcome in a case of nephritis.

1009 Nicollet Avenue.

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#### THE LEAD TREATMENT OF CANCER

At a recent meeting of the British Medical Association, a full summary of the results to date was presented by members of the staff of the Liverpool Medical Research Organization. The clinical survey indicates that there is promise of therapeutic benefit in a few selected cases of otherwise hopeless cancer. The preliminary task before treatment can be begun is the selection of patients who may possibly obtain benefit. The lead suspension which Blair Bell uses contains fairly fine particles, some of which are metallic lead, and some lead hydroxide and lead carbonate. The mixture is more toxic than pure colloidal lead but it is also more effective in the destruction of tumors. Commercial products are not as yet available, but several laboratories in this country and in England are experimenting with various preparations, hoping soon to be able to develop a standardized and reliable product. It seems that Blair Bell has shown that, when employed under cited limitations and by those who possess proper laboratory facilities and clinical experience, lead therapy offers to a small number of persons affected with inoperable tumors, a chance to escape the consequences of the disease. But before any widespread use can be made of the method, some means of removing lead from the body to control acute or chronic poisoning

should be developed. The whole situation is thus frankly in the experimental stage. To carry out the treatment at all, requires hospitalization of the patient for some months, laboratory and clinical facilities not everywhere available and funds for frequent transfusions. It seems improbable that the method will ever replace surgery or compete with irradiation, but it has already accomplished something in patients in whom one or both of these procedures had failed. (*Jour. A. M. A.*, Jan. 8, 1927, p. 103.)

#### PHYSICAL THERAPY AND PSEUDOPHYSICS

Much of the literature on physical therapy has apparently been written with an eye to the royalty statement or the publicity returns rather than to the possibility of scientific criticism. These treatises become impressive, in size, at least, by the inclusion of statements on the physics of the apparatus culled almost in toto from the advertising and descriptive matter published by a manufacturer. This practice might be commendable if the physical concepts were not often wholly at variance with the concepts generally accepted by physicists. The physician who desires a substantial knowledge of physical therapy must choose his sources of information carefully. (*Jour. A. M. A.* Jan. 15, 1927, p. 175.)

## NEW AND NON-OFFICIAL REMEDIES

The following articles have been accepted by the Council on Pharmacy and Chemistry:

ELI LILLY & COMPANY

Ricinoleated Antigen, Scarlet Fever, Immunizing-Lilly.

NATIONAL ANILINE & CHEMICAL COMPANY

Tablets Gentian Violet Medicinal—"National," 0.0324 Gm. ( $\frac{1}{2}$  grain).

Enteric Coated Tablets Gentian Violet Medicinal—"National" 0.0324 Gm. ( $\frac{1}{2}$  grain).

PARKE, DAVIS & COMPANY

Glaseptic Ampoules Sodium Cacodylate—P. D. & Co. ( $\frac{3}{4}$  to  $1\frac{1}{2}$  grains).

THE UNITED LABORATORIES.

Culture Bacillus Acidophilus—United Laboratories.

### TRUTH ABOUT MEDICINES

*Saf-T-Top Mercurochrome Solution.*—An aqueous 2 per cent solution of mercurochrome—220 soluble (New and Non-official Remedies, 1926, p. 249) in ampoules containing 2 c.c. and having a capillary opening. Robert A. Bernhard, Rochester, N. Y.

*Bismuth Salicylate in Oil*—P. D. & Co.—A suspension of bismuth salicylate U. S. P. (New and Non-official Remedies, 1926, p. 97) in a liquid composed of camphor, 10 per cent; creosote, 10 per cent; olive oil, 80 per cent. Each c.c. contains bismuth salicylate, 0.13 Gm. (2 grains). Parke, Davis & Co., Detroit.

*Glaseptic Ampoules Bismuth Salicylate in Oil*—P. D. & Co., 1 c.c.—Each ampule contains 1 c.c. of a suspension of bismuth salicylate—U. S. P. (New and Non-official Remedies, 1926, p. 97) 0.13 Gm. (2 grains) in a liquid composed of camphor, 10 per cent; creosote, 10 per cent; olive oil, 80 per cent. Parke, Davis & Co., Detroit.

*Concentrated Pollen Extracts*—Swan-Myers.—In addition to the products listed in New and Non-official Remedies, 1926, p. 28, the following have been accepted: Cosmos Concentrated Pollen Extract—Swan-Myers; Dandelion Concentrated Pollen Extract—Swan-Myers; Palmer's Amaranth Concentrated Pollen Extract—Swan-Myers. Swan-Myers Co., Indianapolis.

*Erysipelas Streptococcus Antitoxin*—Lilly (Concentrated Globulin).—An erysipelas streptococcus antitoxin (Jour. A. M. A. August 28, 1926, p. 671) ob-

tained by injecting horses subcutaneously with strains of hemolytic streptococci obtained from Dr. A. R. Dochez from human cases of erysipelas lesions, bleeding the horses, and when test bleedings show the serum to have reached the desired potency, bleeding as plasma which is concentrated and refined. Marketed in syringe containers (therapeutic dose) containing 5,000 "units." Eli Lilly & Co., Indianapolis. (Jour. A. M. A., Feb. 5, 1927, p. 403.)

*Antistreptococcic Serum* (New and Non-official Remedies, 1926, p. 339).—This product is also marketed in 20 c.c. and 50 c.c. piston syringes. Parke, Davis & Co., Detroit.

*Tablets Gentian Violet Medicinal—"National," 0.0324 Gm. ( $\frac{1}{2}$  grain).*—Each tablet contains Gentian Violet Medicinal—"National" (New and Non-official Remedies, 1926, p. 167) 0.0324 Gm. ( $\frac{1}{2}$  grain). National Aniline and Chemical Co., New York.

*Enteric Coated Tablets Gentian Violet Medicinal—"National," 0.0324 Gm. ( $\frac{1}{2}$  grain).*—Each tablet contains Gentian Violet Medicinal—"National" (New and Non-official Remedies, 1926, p. 167) 0.0324 Gm. ( $\frac{1}{2}$  grain) and is coated with phenylsalicylate containing some keratin. National Aniline and Chemical Co., New York.

*Ricinoleated Scarlet Fever Antigen.*—A bacterial vaccine detoxified with sodium ricinoleate according to the method of Dr. W. F. Larson. Enough favorable evidence has accumulated to indicate that this preparation is worthy of clinical trial by physicians. The antigen is used for active immunization against scarlet fever.

*Ricinoleated Scarlet Fever Antigen Immunizing-Lilly.*—This product is prepared from whole broth cultures of scarlet fever streptococci, containing 1,000 million organisms in each c.c. modified with 2 per cent of sodium ricinoleate. It is marketed in 1 c.c., 5 c.c. and 20 c.c. vials. Eli Lilly & Co., Indianapolis. (Jour. A. M. A., Feb. 19, 1927, p. 567.)

*Plague Vaccine, Prophylactic.*—Plague bacillus vaccine (New and Non-official Remedies, 1926, p. 354) marketed (for single vaccinations) in packages of two 1 c.c. vials; in packages of ten 1.5 c.c. vials; in packages (for double vaccinations) of one 20 c.c. vial; in packages of three 1 c.c. vials. Eli Lilly & Company, Indianapolis.

*Cholera Vaccine, Prophylactic.*—Cholera vaccine (New and Non-official Remedies, 1926, p. 351) marketed in packages of three 1 c.c. vials; in packages of ten 2.5 c.c. vials. Eli Lilly & Company, Indianapolis. (Jour. A. M. A., Dec. 25, 1926, p. 2163.)



# MINNESOTA MEDICINE

OFFICIAL JOURNAL MINNESOTA STATE MEDICAL  
ASSOCIATION, SOUTHERN MINNESOTA MEDICAL  
ASSOCIATION, NORTHERN MINNESOTA MEDICAL  
ASSOCIATION, AND MINNEAPOLIS  
SURGICAL SOCIETY

Owned and Published by  
The Minnesota State Medical Association  
Under the Direction of Its

EDITING AND PUBLISHING COMMITTEE

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## EDITORIAL OFFICE

CARL B. DRAKE, M.D., Editor  
2429 University Avenue, Saint Paul

## BUSINESS OFFICE

J. R. BRUCE, Business Manager  
2429 University Avenue, Saint Paul  
Telephone: Nestor 1381

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Subscription Price: \$3.00 per annum in advance. Single Copies 25c. Foreign Countries \$3.50 per annum.

Vol. X                      APRIL, 1927                      No. 4

## EDITORIAL

### Medical Ethics and the Newspapers

In the American Medical Association Journal of January 27, 1927, the subject "Popular Medical Information" is editorially discussed.

The following statements are made: "Physicians want causes, principles and methods popularized with a *minimum of accent on personalities*; newspapers and magazines \* \* \* attempt the same ends through the *primary promotion of individuals*, \* \* \* headlines in our press \* \* \* popularizing, even *dramatizing*, persons rather than matters. \* \* \* This is *inevitable and uncriticizable*. \* \* \* Most physicians object because it (1) unduly promotes the *personal interest* of one \* \* \* over that of his *colleagues*; (2) often leads to acceptances of one physician's opinion; \* \* \*

(3) gives to the charlatan opportunities in the promotion of his wares; (4) leads the public \* \* \* to destroy their confidence in all medical teachings; (5) tends to create exalted ideas of the importance of minor health matters; (6) creates \* \* \* opportunities for spurious 'specialists' to promote their half-baked ideas, \* \* \* in the name of medical science." (*Italics ours.*) The development of "Hygeia," the "clip service" and the information available through the archives of the American Medical Association are mentioned as the best avenues through which the public may be educated via the newspapers.

Viewing the subject from a somewhat different angle, is the time not propitious for the correction of an abuse which has become magniloquent beyond the stage of nausea? Is it better to close our eyes to these acts and all fall in line and, as Goldsmith says, agree that "all the little fishes talk like big whales"? Can the newspapers be induced to respect the code of ethics or must we agree that the frequent appearance in the newspapers and magazines of the names of a few members of our profession is "inevitable and uncriticizable"?

The medical profession has for generations assumed a clearly justifiable pride in the attitude of its members regarding this question. So universal has been their consensus that the spontaneous and frequent appearance of the name of any regular member of the profession in the newspapers has served to classify him in a category which was in no sense enviable. Unfortunately such classification has been confined to the sacred precincts of the professional mind and the general public shared in no degree in scenting the onus attached to this blatant method of self-aggrandizement. The innocent public, not realizing the true state of affairs, has always taken its cue from the glaring headlines with the inevitable result that the advertised physicians have profited while their confreres have been robbed of some of the practice which otherwise would have come to them.

There are numerous methods of taking advantage of one's brother in the practice of medicine. The secret division of fees is only an example and yet the frequent appearance of a physician's name in the daily papers is, perhaps after all, the most reprehensible and undoubtedly the most

profitable. As a rule, the higher the standing of the physician, the greater is the onus and likewise the profit. The editorial quoted above states that the practice is "inevitable and uncriticizable." Is this true? We sincerely hope it is not.

It is most unfortunate that instances are legion in which the names of outstanding figures in our profession have repeatedly appeared in the daily papers. Likewise despatches have been broadcast from their home cities and the newspapers have published frequent reports of interviews with them.

Many of our readers will remember a circumstance which took place a few years ago during a meeting of the American Medical Association. A certain renowned surgeon was listed upon the program for a paper. The paper was to have been read on a Wednesday morning. Excerpts from this paper appeared between quotation marks in the daily papers on *Wednesday* afternoon and *Thursday* morning. Many paragraphs of the paper were copied verbatim and yet, as it happened, this surgeon was unavoidably delayed and his paper was not read until *Thursday afternoon*. Should this surgeon have been called upon to explain? We believe he should. Should the standing of any physician have entitled him to immunity? We sincerely hope that such is not the case.

It is realized by everyone that some members of our profession have reached a degree of eminence which necessarily attracts the spotlight of publicity. Newspaper representatives attend the meetings which they address and what they say is avidly appropriated for the simple reason that it makes good "copy." This is perhaps a worthy educational procedure and even if it were not such, it is probable that it would be difficult to remedy the situation. And yet it is most unfortunate that it is these same individuals who not infrequently furnish newspaper reporters with interviews upon almost any subject from the advisability of bobbing the hair to the Nicaraguan situation. Are such interviews necessary, desirable, fair, or ethical? Should the standing of any physician before the public warrant such practice? Is any good service, aside from the increased influx to him or his clinic, served by such flouting of the established standards? We do not think so.

Is it ethical, and to the best interests of the public or the profession as a whole, to have a barrage of despatches wired from any medical center, in which individual members or groups of the medical profession are "played up" under large type headlines? We do not think so.

There is no gainsaying the fact that the "playing up" of the term "specialist," "scientist," etc., makes a profound impression upon the lay mind. The fact that the interview given in any particular instance reflects the actual truth or that the physician or group of physicians quoted are competent, alters in nowise the sobriquet which can legitimately be placed upon this method of advertising as a label.

Can frequent repetitions of this sort of thing be prevented? We believe they can. Furthermore—if we properly sense the attitude of the profession in general—we believe that the cessation of such unethical advertising will be demanded. Is this not a matter of sufficient importance to demand the attention of our House of Delegates? We believe it is.

Constructively one may say that the writer, many years ago, upon being elected to an important office, found himself almost daily requested by the newspapers for an opinion regarding a variety of questions. His first action was to insist that the newspapers represented, when publishing any information given by him, refrain from using his name. Although many years have elapsed, this confidence has been violated but once or twice.

In the county society to which the writer belongs a committee has been appointed for the express purpose of passing upon subjects of medical interest before they are presented to lay readers. The names of the members of this committee never appear. Instead, the newspapers use the expression, "A representative of the ——— county medical society states, etc." Should not *every* county society make the same arrangement? It would seem that some plan more or less closely allied to that employed by this county medical society should be adopted by the county, state and national associations.

In Minnesota approximately one hundred men are given medical diplomas each year. These men go forth with high ideals in their heads and perhaps a copy of "the code of ethics" in their pockets and with the intention of earning an

honest livelihood. Can it be done in the face of such unfair competition? Can they retain their high ideals? Can those who look to the leaders in our profession earn an honest living provided those who are "sitting pretty" advertise unethically? The methods referred to savor all too largely of those of the quack. While it is undoubtedly true that the medical profession as a whole has been over-modest in appearing before and presenting its knowledge to the laity, the question is pertinent as to whether or not the methods above referred to are calculated to remedy this condition to any extent, or indeed, whether these methods can, in the vast percentage of cases, be thought to be actuated by motives which may be altogether altruistic.

The publicity herein referred to, is, to say the least, loathsome to a vast percentage of physicians who have the best medical ideals in mind, not only fails to fulfill the objective—the education of the laity—but offers to certain members of the profession an opportunity for gaining publicity, thus increasing their practice, setting a bad example to those who perhaps look to them for guidance, thus taking an undue advantage of their fellow practitioners. The following quotation from the New York Herald-Tribune shows that one editor, at least, grasps the situation. He says in part:

"During recent years the annual scientific meetings have been reported widely in the newspapers; very competently, on the whole, but not by experts. Skilled scientists would make poor reporters. It is natural that the most striking—and least probable—announcements should be considered the best news. Of these the public hears most. Less noise is made by the hundreds of solid, sensible and useful papers that were read at ———, but it is from these that we will hear most and win most as time goes on, and after the idea of sunspot wars has vanished, unlamented, into limbo."

Once more we ask, can such flamboyant out-breaks be prevented? And once more we state our conviction that it not only *can* but *must*, be done. The "joy ambition finds" must be curtailed if the medical profession expects to live up to its ideals in the matter of *Ethics* and the *Newspapers*.

### Pernicious Anemia

The disease entity of pernicious anemia seems well established although certain diagnosis is oft-times difficult and its etiology is admittedly unknown. Whether in the future it will be possible to subdivide further this type of anemia remains to be seen.

Various theories as to the causation of the disease have been proposed. These include (1) a lack of vitamin A in the diet, which allows the growth of the Welch bacillus in the intestines and the development of a toxin; (2) a deficiency of stroma-forming cells in the bone marrow; (3) a malignancy of the bone marrow, and (4) a specific infection. Various facts seem to disprove all the theories so far proposed.

The recent work with liver feeding in pernicious anemia reported from Boston has attracted considerable attention. In experiments on dogs, Whipple found liver more stimulating to blood regeneration than any other meat. Heart, red muscle and kidney, although serving as a stimulus to blood formation, proved much less powerful. Iron alone was found to be less stimulating than meat alone and arsenic seemed almost inert.

As a result of the application of these findings clinically, Minot and Murphy have recommended a diet which, in short, is supernourishing, being rich in meat, raw fruits and vegetables, and liver (preferably raw) being the piece de resistance. In a reported series of forty-five cases of pernicious anemia improvement under this diet was the rule within one or two weeks. John Fulton, Jr., in a series of thirty-six cases observed at the Peter Bent Brigham hospital, a report of which we were fortunate enough to see, had much the same experience. All cases with one or two exceptions did well on the diet, the red cells increasing to over four million in some cases in an incredibly short time.

Whether the experience in Boston will be universal remains to be seen. A certain number of remissions in this disease is the rule. Liver diet is certainly empirical and not logical if there is anything to William Hurter's conception of pernicious anemia. This distinguished Britisher first began writing about this disease in 1888 and emphasized repeatedly his conception of the malady as "infective hemolytic anemia." As far back as 1903 he reported the presence of a deep seated pure streptococcal infection of the tongue

in three cases and mentioned the existence of a hemolytic infection in the mucosa of the stomach and in some cases in the intestinal mucosa. What methods he used to determine these facts we do not know and we are not aware of any investigations along this line having been done since.

The report by Dr. Schneider, appearing in these pages, of biopsies performed on the tongue in pernicious anemia cases is especially interesting. Whether this procedure will prove practical in establishing a diagnosis will depend on whether in a larger series of cases the finding of deep seated streptococci in the tongue sections is constant and limited to this disease. This preliminary report looks as though this might be the case. The presence of deep seated streptococci in the tongue may, however, be the result of an ulcerative stomatitis with no diagnostic or etiological significance as far as the anemia is concerned.

It is to be hoped that further investigation in regard to extensive infection of the gastrointestinal tract, the stomach and intestines especially, will be made in an effort to determine whether pernicious anemia is actually a specific infection, some of the earmarks of which it certainly has.

## MISCELLANEOUS

### REPORT OF THE ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE AND HOSPITALS—Chicago, February 14-17, 1927

Great is the power of the A. M. A.—and wide the distribution of its efforts. Not so many years ago it had but one great conclave yearly—its annual session. While it may be surrendering some of the glory of these large medicinal offensives to such groups as the Interstate Post-Graduate Assembly, it is drawing in its lines of influence with increasing numbers of "Annual Congresses" pertaining to the peculiar and intensive work of special committees and departments. This meeting at the Palmer Hotel, Chicago, of the representatives invited by the A. M. A., was for the purpose of discussing "Medical Education and Hospitals," and meets co-ordinately with the "Federation of State Medical Boards." Appointed to attend and represent the Minnesota State Medical Association by its President, Dr. William Braasch, the writer proposes to make a report to the society in the pages of MINNESOTA MEDICINE. The time is so crowded at the one annual session that at best little attention can be given to committee reports. In any case, the gleanings of a meeting such as this may interest some and

others not at all. For the latter, let the report be read only by title; for the former, let them get it here in this form and digest it at their leisure before the meeting.

#### THOSE IN ATTENDANCE

This is not a youthful assemblage. Everyone hugs his manuscript closely, but reads it well. Little oratory is in evidence, and less general discussion. Perhaps this is because notably controversial matter is not introduced. Evarts Graham of St. Louis holds rather decidedly opposite views from W. A. Pusey of Chicago, yet they reservedly and dispassionately assert a stand that is novel to none of their audience and represents at most different angles of the same view—the questions pertaining to why general practitioners are getting scarce and why recent graduates cannot fancy a rural habitation. Teachers predominate; there are a few hospital men and public workers.

#### MEDICAL ETHICS

Arthur Dean Bevan endeavors to enlarge the curriculum by injecting a definite course in this sublime domain, and forthwith to bring out the recent graduate clad in the knightly armor that will render him safe from the devastation of materialism and save him from the worship of the Golden Calf.

Ray Lyman Wilbur (erstwhile president of the Association and still of Stanford University) says the curriculum is already absurdly long, and, as in a useful car, efforts should be expended to take parts off rather than to put them on.

President-elect Jabez Jackson had some sound advice to give, and makes it clear enough why doctors should not advertise. Yet, Professor Carlson of Chicago University seemed to settle the issue by stating that students could not be taught to be ethical any more than they could be taught to be intelligent.

Louis Wilson spoke of the flood of candidates that came to European centers of education after the war. These often came from backward countries, having poor traditions, and seeking most of all a betterment of their physical station and a financial harvest. Thus it is seen that in "character building and personality creation" medical schools tackle too much if they essay to carry on without the aid of good homes, religion and the heritage of fine cultural trends that are no different for physicians than for anyone else. It was pointed out effectively by George F. Follansbee of St. Alexis Hospital, Cleveland, in speaking of interns, that here the staff members have the opportunity and the necessity of passing on to the new recruit by personal example and daily precept those principles we all stand for so zealously.

#### THE GENERAL PRACTITIONER

A discussion of this engaging personage brings out many tributes that might even surprise the subject, as did the clergyman's remarks astonish the widow at the bier of her departed spouse. We should all look for a report soon to appear from a commission directed by Willard C. Rappleye, New Haven, Conn. The statistics given are most engaging and bear on many features of our medical life, and throw light on what is coming in specialism. "Of the 1,920 graduates



studied, 53 per cent began to limit their work to a specialty without any previous general practise." This is only one item in an inspiring document which lends great weight to Graham's contention that, much as we may lament the passing of a fine old type of doctor, another economic deal of the social and industrial cards has called into demand and being a totally differing régime, and out of it the drift to urban life and motorized roads renders life in hamlets for modern doctors impossible. The same story is told by N. P. Colwell, Secretary of the Council, in statistically picturing the enormous growth in hospitals. Modern doctors are hospital trained and in them they are going to practise. Dr. Pusey is alarmed, and doesn't like it, but he must know that many a family is riding in a car when they should have stuck to the horse, but it is folly to be angry with them, and who knows but that they are not half right anyway!

#### THE AGE OF GRADUATION

W. J. Mayo cited his own rise as a general practitioner, and some glorious rise it has been. He thinks most good doctors came from the farms. The writer, having done so, agrees with him. He told us he graduated at the age of 21. It is a great good fortune that he was not 35, and that he had some forty splendid years to carry on, but if some had their way few students would have much hair or enthusiasm when introduced to their life work. Wilbur and Follansbee both agree that the student gets nowhere until he is given and accepts personal responsibility.\* The former cryptic speaker would relegate to the secondary schools all the basic sciences and chiefly rely on teaching "the Art of Medicine" in the medical schools—direct physical diagnosis on the patient—in something like three years. The latter points out very sanely that medical education is only begun in the schools, and as interns the material must be molded gently into the proper form to prosecute a real education for the rest of the doctor's life. Wilson names a Bologna orthopedist who spent four years in anatomy, five more in general surgery, and then started to study his specialty! This man now has fifteen American students with him, *but he graduated when he was 20 years old*. From Pennsylvania comes the whisper that should arouse hope in coming students—they say they are lessening the hours of attendance "*to let the student have a little time to think*." Another says, to play poker! This may answer Mayo's observation, and point a relief to the state where "students may leave their schools with a mind burned out." Pusey is not so sure that the zeal for making research workers is justified. He might have added that research workers, like poets, are born and not made. Mayo reflects that a glamour of spirituality surrounds an effort to save unborn generations, while a feeling of sordidness attaches to any move to ease presently those tortured bodies and souls which beseech our aid. Well said, as usual.

\*A warden of Cook County hospital tells me that since interne years have been made compulsory, those who take them do not show the individual zest and acumen of an older regime when he made the personal choice.

#### PREVENTIVE MEDICINE

Professor W. S. Leathers, of Vanderbilt University, Nashville, Tenn., speaks out boldly for his service. While it appears that he might agree with Wilbur, and divorce "head specialists," and with others on silencing more humble segmental docents like orthopedists and dermatologists, he certainly could not see an acceptable school that would not assist the Almighty in getting local help to administer the Universe. He wants a lot of Public Health in the course. He didn't say it blatantly nor annoyingly, but he hinted that out of Rappleye's cohorts\* that are gradually to decrease the number of doctors per population from the present of 1 to 891, to 1 to 1,300 (estimated, of course) in 1955, he would abstract from 5 to 10 per cent to keep up a constant army of some 30,000 workers in constant touch with the public treasury. Someone should page the Taxpayers League!

If these efforts encroach upon the domain and work of private practitioners he graciously reminds that most of the paid agencies will plug hard for the principle of "yearly medical examinations," and forsooth, if the doctor is able to drag himself to the proper making of this routine examination (on folks without a complaint to assault) something may come of the offer. On the same subject, a man whose name I missed, raised the often heard protest that much of the "Public Health" effort should get back and be administered by the "family doctor"—mentioning the very widespread activity of the present parent teachers associations and their campaigns to have all children brought before their family physician at proper intervals rather than before some arbitrary, impersonal flying squad known variously as school doctors and nurses. In briefly again pointing out that the control of all these efforts easily gets away from the medical men, and there are scores of voluntary agencies battering at the legislative doors to become official governmental agencies; and soon we must behold a bureaucratic commonwealth, of which the Kaiser's much condemned domain of a few years ago was only a feeble forerunner. This method of "strengthening the foundations of government" can only be a most doubtful expedient at the best. It is in keeping with a lot of other directional effort to "make men good"—you see we still retain the priestly function.

#### THE PRESENT STATUS OF HOSPITALS

It can be seen that the noted English medical schools grew about established hospitals, following a definite trend in medical education that was as fortunate as it was logical. We came to it in our country, but not without another sort of beginning in private schools that ended in bad repute. N. P. Calwell (vigorous director in the A. M. A.) has an astonishing lot of information about us and our hospitals. Study his figures on hospital increase, their thirst for interns, and the number controlled, if not owned, by medical schools, and one soon sees that hospitals are now and must continue to be an integral part of our medical educational system. Young medical graduates may be a

\*From report of Commission on Medical Education.

little humiliated, but they will only get the truth if they read the proceedings of this assembly, and find it reiterated again and again that in leaving school their education has only begun. Indeed, some would have practitioners checked up as to their status (by examinations, I presume) at stated intervals, such as five, ten or fifteen years. The writer protests against any such tests after twenty years! The position of the hospital and its magnetic pull on rural doctors, bringing them into our urban concentrations, is too big a subject to report here, but observe this: Dr. Dodson asserts that an analysis of errors should lead us to avoid a second one of the same kind. He had reference, at the time, to his fear that non-medical groups are going to capture our public health leadership, but he used as his example of the first error our loss to the cults of "mechanical therapy."

Frank B. Granger, of the Boston City Hospital, would obviate that, and build into our hospitals the proven and worthwhile departments. Of course he showed how they should be used, and the staffs came in for the usual pommelling, because they used such a department only for "hopeless chronics," and passed up the industrially crippled and subacutely confined, many of whom could be restored to economic independence much faster if given skilled mechano- and electro-therapists' aid, based on prescriptive orders. Again, schools for these folks are advised, and New York State's representative sends out a whoop that their Department of Education is the agency to determine what a "school" is to be, and asserts its unqualified capacity to keep whatever minions any school belches forth from descending to quackery. More anon. Anyway, whether they invite it or not, hospitals are in the limelight. They deserve and seek (not unsuccessfully) endowment; step by step, as they come into our scope of education and life prolongation, they must synchronize with all economic and social advances approved by judicious and thinking opinion—they must devise the machinery and directional capacity to move with it. Theirs is no longer an isolated enterprise that rises or falls by its own efforts; it assumes community responsibilities, and rightfully demands sympathetic support.

#### INTERNS

Minnesota is still something of a pioneer in demanding the "fifth, or intern year." Let no intern assume that the "fathers in medicine" have no interest in him. Let him read all that is published of the splendid and sane remarks of Geo. E. Follansbee, of Cleveland. It is comforting to observe that in St. Mary's hospital at Duluth, we have tried to put into operation nearly everything the Doctor spoke of as desirable. Everyone agrees that the intern cannot get on unless you foist responsibility upon him; yet, you cannot give him that chance until you know what he is capable of doing. He appears at times to be so fed up after a process of six-year-stuffing that indeed his "quiz compend" memorized cargo of supposed facts deserts him at the threshold of an opportunity to use that reason and personality that all the speakers commend so highly. Certainly everyone approves of the

idea of "living with the intern on ward rounds," and obviously the man who claims his private patients cannot be studied by the intern has indeed an odd clientele. The unanimous report is that patients like this round—the more the merrier—the more they have to talk about when they go home.

Where hospitals are large enough, a growing disposition is seen to add "residents from the best interns on a modest salary." This is virtually one of the best present day means of working into a specialty, and in various forms under such men as Pusey and Schambeau, and in clinics here and there, shows a proper return to the preceptor system. This, in fact, immortalizes the attainments and the "art" of the good men that otherwise might easily die with them. If this meeting is in any way representative of present day thought (and it appears to be), then the teachers in medicine are faced vastly more with the "teaching of an art than a science." One need not agree with McCormick of Kentucky, that "whole time teachers in basic medical sciences are controlling medical education to its enormous detriment," to at least urge that ethically minded, spirited and well trained staff attendants in our good hospitals, have, with interns, a great opportunity to hold the promising material in our great profession close to those traditions that have triumphed magnificently in the past and promise more for the future. Indeed, Wisconsin has taken a most suggestive step in sending out its four-year students to carefully chosen extramural preceptors.

#### EDUCATION FROM POSTGRADUATE CLINIC PROGRAMS

Walter Bierring, of Des Moines, Secretary of the Federation of State Medical Boards, was a good man to discuss the genesis of our present day stupendous medical conclaves. Naturally, the line of discussion soon led to Peck and Peoria, Ill.

The essayist agreed with many others that the splendid efforts of the "assembly of the world" may deteriorate solely because of size and "amplifiers." A clinic, like a well, may be "dry," but not quite of such aridity as to render the name incongruous.

State medical societies are coming to arrange demonstrations that are not so large but yield a maximum of opportunity for all practitioners to keep in sight of the legal expectation, the "standard of practice of his time and locality." Schools and alumni associations are arranging the same opportunities. Edward Evans of La Crosse tells us that the first great step toward rejuvenation in that spirited commonwealth (ruled by the LaFollettes) was to get a full-time, non-medical state association secretary. Some of the things he has done will be enumerated in discussing the "Basic Medical Practice Act."

Charles A. Gordon,\* of Brooklyn, stopped off between trains (and obstetrical cases) to tell of the brilliant accomplishments of Kings County and the denizens of Long Island. What he has said and what everyone knows, is that any good doctor must admit that it is a very dry year in his reaping of accomplishment when he does not learn more than he ever got in any year in college; and some will tell you truthfully that they

\*A most excellent and busy gynecologist.

have encompassed in some periods of two years more than they got in all previous endeavor. That being the case, it is up to every individual man to ask himself how he is going to get his quota. Certainly he will not get it staying away from medical conferences and hospital staff meetings, nor by offering sneering and slighting comments upon the discussions he hears when he does attend; certainly he will not get it by investing his savings in Mexican mines and neglecting life insurance. The manner of popularizing our meetings—state, county and hospital—deserves the fullest study and some pedagogical guidance, because it is obvious that as with interns so with practitioners—it is not what they are *told to know* that sticks, but what they *think out* on their own power that remains and builds as a foundation. He is a fortunate man, indeed, who has in the foundation less of prejudice than of principle.

#### FOREIGN STUDY AND INTERNATIONAL AMITY

Louis B. Wilson (always a man of great charm and suavity) has a paper which all should read. He tells how those seeking to enrich our treasure house of scientific facts may go to foreign centers, get what is possible, and not give offense. Needless to say, traveling from a great graduate school to foreign centers he had an entree not given to many. However, the writer, without any prestige, and few introductions, covered some of the same ground a year ago, and found the same decidedly friendly feeling everywhere. Indeed, Medicine is an endeavor that can know no national boundaries—Pasteur's life illumined the whole earth, and it claims him, granting to France that profound courtesy that inherently goes out among gentle folk to a mother.

Read what he says about Italy especially, and see how closely our profession is tied up with social and economic trends which few of us strive to understand.

With the very recent experience so freshly in mind of a visit to a great medical school just opened—a factory unit system—skyscraper—reinforced steel and concrete—express elevators—all so redolent of like structures that belch out industrial machinery—what else are we interposing besides standardized research rooms, to enkindle in a Hunter or a Pasteur that spark of individual genius that shatters routine and mounts on the wings of destiny to establish new epochs?

#### QUARTER SYSTEMS, BASIC SCIENCE LAWS AND LICENSURE

These seemingly disconnected problems came under a unified discussion, and as the intricacies unfolded it could be seen that they revolve about ways and means to best safeguard our population in its search for accuracy and safety in matters of health.

In the first place, it can be stated that the field of medical licensing boards is coming to be narrowed to the degree that so few applicants now graduate from poor schools that it is unnecessary for the boards to so explicitly outline what he should and must have been taught. That indirect use of these boards to enforce the improvement of medical colleges has ceased to be a great need. Instead, for example, if schools can work the four-quarter system and push a good stu-

dent through in three calendar years, it is absurd to hold that his license is in question because he did not spend exactly the years stipulated according to the board's regulations. Much was said to show the advisability of working the expensive plants of our colleges the year around—granting that the summer session might be skimmed a bit in actual instruction, it was pointed out that the season might produce certain material not found at other times, and by vacationing at other seasons of the year teachers might well find those whom they sought to visit at home. If everybody vacations at the same time they might meet by accident, but not in their pedagogical attire or mental attunement. It seems, in any case, that the boards are all agreed on their province, and Class A schools may soon see their graduates given the hand of welcome without too much inspection of mental baggage when the state examining boards pass on these new medical immigrants.

Edward Evans, of LaCrosse, indeed stirred up the discussion\* with his recital of what the Basic Medical Practice Act was doing for Wisconsin. To those of us in a state where we are presently striving to enact a similar law and have been told much about its promises, perhaps it is now wiser to report in some detail the remarks of the Law's critics. Let us first, however, trace "the genesis of Wisconsin's attainments" as Dr. Evans gives them:

(1) Their State Association came to employ a full time, paid, lay secretary. This newspaper-trained executive has already made much history that is well known to most of us.

(2) They had Dr. Dearholt and his anti-tuberculosis work; also county nursing and "an awakening of the county societies" through good publicity—sending letters and Hygiea to the very legislators who turned them down twice before—and much besides; also a lay issue of their state journal, etc.

(3) Finally, by such state-wide education, getting their Basic Medical Practice Act through an almost unanimous assembly.

(4) They spent a good deal in publicity under the direction of those trained in that work. It is said they backed away and told the Wisconsin solons that the State Medical Association would not be their guardian; that they would assemble the facts, but assume no further responsibility. Yes, they did raise their dues—a good deal.

So far, what has been the result: Whereas two hundred chiropractors had been coming in yearly, only one has gotten by the Basic Science Board since. Much more was said, but let us listen to the critics:

(1) Dr. Crowe of Texas found much fault with it: "No law is any better than the instruments it contains to enforce it."

(2) Dr. Rypins, Secretary of the New York State Medical Examiners, says, "it is a gold brick" according to their light; that if we wait fifteen years it can be judged better; that Wisconsin has its full share of quacks still, even if they stopped the flood nearly

\*Much the liveliest discussion heard.

three years ago. "Give the 'chiro's' time and they will get over your hurdles and pass your examinations; anyway, you have no idea how many slipped in quietly and never came near any board."

(3) Stalwart McCormack, from Kentucky, said he did not oppose any plan for Wisconsin that so abundantly satisfied its people, nor did he feel different toward any régime that brought joy to the Russians, but he did object to either one coming forward as testimony before a world that is to accept the same panaceas. "Perhaps the disease was so bad in Wisconsin as to merit such a compromise with already established cults and their boards, but the disease cannot be as bad as that in most of our land."

The crux of the situation is obviously enforcement and ways and means to insure it. Hence, let us elaborate that phase under another heading:

#### KEEPING TRACK OF THOSE WHO ARE CALLED "DOCS"

You will be surprised and pleased if you visit the A. M. A. building and are shown their identification card system, which traces the student from his earliest to his latest graduate studies. All that is an outgrowth, and indeed, much of the instrument, which helped root out the "scandalous diploma mill" of a year or two ago. H. L. Mencken, in the Chicago Tribune of Sunday, February 13, "lambasts" the chiropractors as only a wielder of trained vitriolic shafts can do it. The bouquet he passed to us was not without its subtle sting—the present-day cost of getting a medical education and the corresponding weight of touch we administer in order to compensate, introduced his article. Little can we appreciate how eager the grafter in quackery and politics is to dig up a few unused diplomas and put them to work. Hence, while Wisconsin came to its law after study and thought, Connecticut did the same after a shameful scandal and a hasty effort to atone.

Now, with this in mind, Dr. Rypins and the New York board say we are on the wrong track. They advocate strongly the "registering of doctors yearly," and accordingly, the collection of a certain amount of money. But this should not be spent by the State Medical Association, either in convicting infractors of the law or in ferreting them out. When this is done they say the public cries "medical trust," and exclaims that a powerful clan is using its own weight and power to lessen competition. Possibly our law has "teeth enough"; perhaps its administration is being put in effective and understanding hands. But, quackery has always existed, and probably always will.

New York State, with all its teaching chartered and under the Department of Education, has, it seems, much more mobile machinery than others in moving about and cutting off the career of this and that "Doc" wherever found if he isn't properly stamped and approved. One recalls the fire of righteous wrath that emanates from a county society member when he majestically moves "that the board of censors of our society have this 'varmint' brought before the tribunals of justice—." Hase any one seen justice clogged by the number of these who ever get before her portals? Can anyone see a busy and indifferent attorney gen-

eral's office going out of its way to see that the county attorneys do their duty?

#### TEACHING AND BEING TAUGHT

An apology should be offered for this verbose report. However, if you read this discerningly you will give the writer credit for attempting to sketch enough detail to induce you to read along the lines enumerated, where otherwise you could hurry on to what appears (offhand to busy men) to command their full attention. A Chicago man of much experience tells me that lay politicians, in a Len. Small atmosphere, are not much different from the crowd within our own profession, who, jockeying for position and trifling with destiny, postpone accomplishments that should already be ours. For example, the great Cook County hospital has only an autopsy attainment of 20 per cent of its deaths. He well asks, "How can graduate teaching improve when a layman is coroner, and one of the country's best pathologists is displaced because he autopsied too many?" Think of it, when in answer to argument against such a move he responds, "You do not need to cut up bodies to find out the cause of death—what have you got the x-ray for?" It has come to pass that better teaching can be done and more autopsies secured on private than on public charity cases. The same man says, "The poor thank nobody for the care they get; least of all do they thank the doctors. They will listen to no argument that doesn't revolve about the *good that comes to them*. The poor do not give a d— for the other poor; they will do nothing for them, as indeed they did nothing for themselves." This is probably a statement that comes from reflection in a city that (while in America) holds most of its resident Americans in well policed and conducted suburbs. We may say, "Thank God we have none such in Minnesota."

But harken a moment: The big medical schools of Chicago could have taken over part of the big charity service and demanded autopsies as a *sine qua non*. Does any one think the politicians who, hearing of this amount of money cost to be lifted out of their budget for charity hospitalization, would turn a totally deaf ear? As soon as decent autopsies were routinely established the character of medical service would be so much better as to automatically induce all charity patients to demand that service—the rule would soon be as effective as in Vienna. In the meantime, Chicago University is spending five million dollars and getting about two hundred hospital beds—again disconnected and isolated—and either there or next door to Cook County hospital is going to announce a graduate school! Doesn't some of this remind you of our home conditions and the inability of our University and Minneapolis to come to a reasonable agreement? In the meantime, let none of us forget that Rappleye puts the age limit of activity in practice (*of medical students*) as *sixty-five*!

E. L. TUOHY, M.D.

Representative of the Minnesota State  
Medical Association.

Chicago, Feb. 18, 1927.



## OBITUARY

### Dr. Amos Wilson Abbott\*

1844-1927

Amos Wilson Abbott, son of Amos Abbott and Anstice Wilson (Abbott), was born in Ahmednuggar, India, on January 6, 1844. His education, interrupted by the Civil War while he was at Dartmouth, was obtained in four colleges. He was graduated by the College of Physicians and Surgeons, New York, receiving his degree of Doctor of Medicine in 1869. After practicing medicine in the East for a few years, he came to Minneapolis in 1877.

Dr. Abbott taught anatomy in the St. Paul Medical College and, in 1881, assisted in founding the Minnesota College Hospital, where he was Professor of Anatomy and later served as Professor of Gynecology. Later still he became associated in the same capacity with the Medical School of the University of Minnesota and held an emeritus professorship there until his death. At various times he had served on the hospital staff of St. Barnabas, Northwestern and Abbott. In conjunction with Dr. J. Clark Stewart and Dr. F. F. Westbrook, Dr. Abbott founded the Minnesota Pathological Society. He held a number of offices in various medical organizations, having served as President of the Hennepin County Medical Society (1900-01), the Minnesota State Medical Society (1893), the Academy of Medicine (1888), the Pathological Society (1913-14), and the Western Surgical Association (1911). He was a member and Fellow of the American Medical Association and had the distinction of being the first delegate to the first House of Delegates of this organization.

Abbott Hospital, which was constructed with funds donated by the late William Hood Dunwoody, was founded by Dr. Abbott.

Dr. Abbott died Sunday night, February 27, 1927, after a short illness, having spent 53 years of his 83 years in the medical profession, the last half century in Minneapolis.

Surviving him are his wife, who was Miss Helen G. Wright of Delhi, N. Y., and three children: Mrs. Lyndon King, Miss Elizabeth Abbott and Wilson Abbott, all of Minneapolis.

He was a Mason and held a membership in the Lafayette Club.

At its meeting on March 7, 1927, the administrative committee of the medical school adopted the following memorial to Dr. Amos Wilson Abbott, Emeritus Professor of Gynecology:

Doctor Amos Wilson Abbott has gone on, in the fullness of his years—years of usefulness, honor and distinction, "to that bourne whence no traveler re-

turns." Fifty years of professional life witnessed no weakening of the grasp of his remarkable mind, no lessening of his capacity for continual growth, no failing of his perennial interest in his daily work.

He was ideally the doctor of his day—the beloved physician. He was loved of his patients, his associates, his students, his friends. Invariably courteous, unchangingly loyal, emotionally reticent, naturally modest, quietly confident, keenly humorous, everyone knew him for what he very simply was—one of Nature's gentlemen, content to walk straight and strong in his accustomed ways.

Of diagnostic insight, of clear pathologic judgment, of surgical skill, one trait distinguished him above all the sterling qualities that entered into his make-up—he was *professionally honest*. He was pledged to scientific truth as he saw it—and he had the rare ability to see it clearly and to see it whole. He had a contempt for professional subterfuge and sham. He disliked camouflage. He distrusted the subtleties of medical opinion. He stood four-square to all the winds of theory that blew. With Minot, he defined science as "that body of truth that has acquired impersonal validity." Again and again, in his earlier years, he would sit out the discussion of conflicting professional views and at length, rising slowly to his feet, would say: "Gentlemen, how do you *know*." And yet it was of the nature of the man himself to know and to help others to know. For he loved to teach.

One of the charter members of the faculty of the Medical School of the University of Minnesota, he bore a number of teaching titles and did honor to each in turn. He held for years an emeritus professorship. He was slow of speech, but when he spoke men always heard him gladly. They knew him for a law-giver in his professional Israel.

His death is not a matter for regret. He has done a great, a noble work. His name is carved in the masonry of his beloved hospital and there it will remain. His thoughts, his words, his deeds will live indefinitely in the spirit he has created and enlarged therein, in the memory of workers who have worked with him and whose work will continue to be inspired by his leadership, in the service of the divine ministry of suffering he has followed so long.

### Dr. Frederic J. Souba

Dr. Frederic J. Souba, 41 years old, a member of the medical staff of the University of Minnesota for the past 10 years, died suddenly in his office, March 7, 1927.

Dr. Souba was born in Hopkins, and there received his early education. Later he attended the University of Minnesota, and in the college of science, literature and the arts established a high record of scholarship. He was elected to Sigma Xi, honorary scientific fraternity, and after his graduation from the academic college, he entered the college of medicine. There also he established records for scholarship and was elected to Alpha Omega Alpha, honorary medical fraternity.

After his graduation from the medical school he entered private practice for a time at Eveleth, and

\*Read before the Hennepin County Medical Society at its meeting of March 7, 1927.

later returned to Minneapolis, where he became affiliated with the University medical staff.

For a number of years he taught university students at General hospital as assistant professor of obstetrics and gynecology. He was a member of the American Medical Association, the State Medical Association, the Hennepin County Medical Society and the American College of Surgeons.

In addition to his work with university students, at General hospital and his private practice, Dr. Souba was on the staffs of Northwestern, Fairview and Asbury hospitals. He was also very active in the Masonic order, being a member of the Albert Pike lodge of Hopkins, a member of the Shrine, and a grand officer of the Order of the Eastern Star.

He is survived by a wife and three small children, four brothers, Emil of Hopkins, William of Port Arthur, Canada, Arnold of Graceville, and Arthur of Chisholm, and a sister, Mrs. Willis Haugen of Biwabik.

#### Dr. Robert W. Archibald

Dr. Robert W. Archibald, milk expert of the Minnesota State Department of Health, died February 15 at a hospital in Hibbing, from injuries received in an automobile accident near Nashauk.

Dr. Archibald was recognized as the outstanding authority in the United States on the sanitary regulation of public milk supplies, according to Dr. A. J. Chesley, executive secretary of the State Department of Health.

Since he began work for the state in 1917, Dr. Archibald has been responsible for the enactment of pure milk ordinances in approximately 100 Minnesota cities and towns, and has had general supervision of matters relating to pasteurization plants, certified milk sales and enforcement of sanitary regulations affecting dairy products. He also has served as an assistant professor in the department of preventive medicine and public health at the University of Minnesota.

Dr. Archibald was 37 years old. He was born in New Hampshire, and educated at Dartmouth college and the University of Pennsylvania. He came to Minnesota about 15 years ago and was a veterinary doctor at Lake City, later becoming milk inspector at Winona.

Dr. Chesley declared Dr. Archibald to be without question "the best man on milk sanitation in the United States." Chicago and numerous other large cities have sought to obtain his services, but he preferred to remain in Minnesota.

Besides his widow, Mrs. Hazel Selover Archibald, he leaves a father and four brothers and two sisters. All except one, F. S. Archibald, St. Paul, reside in New England.

#### Dr. W. D. Lawrence

Dr. W. D. Lawrence, former owner of the Lawrence sanatorium, and a resident of Minneapolis for 48 years, died at his home in Minneapolis, Thursday, Feb. 17, 1927. He was 74 years old.

He was born May 16, 1852, at Lawrenceville, Canada, and received his early education there. At the time of the Fenian raids in Canada, shortly after the Civil War, he served as captain of the Seventy-ninth Highlanders. He came to the United States in 1872 and enrolled in the Chicago Medical school. Following his graduation he studied abroad and came to Minneapolis in 1879.

Dr. Lawrence organized the Minneapolis Medical and Surgical Institute in 1894 and in 1900 founded the Lawrence sanatorium. He was president of the National Uplift Society and vice-president of the National Christian League. He was a member of the executive committee of the World's Purity Federation and a member of the Minneapolis and St. Paul Academy of Medicine. He also was a member of the Minneapolis Athletic Club and the Minneapolis Automobile Club.

Dr. Lawrence is survived by one brother, Alfred Lawrence, and one sister, Mrs. George Morrison, both of Pasadena, Calif., and a niece, Miss Pearl Lawrence of Minneapolis.

#### Dr. William H. Salter

Dr. William H. Salter of Duluth died suddenly at his home, February 18, 1927. Death was due to heart disease.

William H. Salter was born in Minneapolis in October, 1864. He went to Duluth with his parents when a small boy and attended a private school there. He later attended school in Lawrenceville, N. J., and then went abroad for a few years with his father, who was in American church work in Italy. Upon his return to the United States he again attended school in Lawrenceville and later completed his medical course at the University of Pennsylvania. Following his graduation he attended the University of New York and did hospital work at Bellevue hospital.

Dr. Salter established his practice in Duluth thirty years ago. He was physician of the normal school there and for a number of years was a member of the school board.

Besides his widow Dr. Salter is survived by two brothers, Frank I. and C. C. Salter, and a sister, Miss Mary Salter, all of Duluth.

#### Dr. Bertolet Perry Rosenberry

The following resolution was passed by the Winona County Medical Society and Winona General Hospital Staff in remembrance of Dr. Bertolet Perry Rosenberry, who died January 19, 1927:

Whereas: Almighty Providence has suddenly called from our midst our friend and fellow-worker Dr. Bertolet Perry Rosenberry, for many years a member of this Society and a member of the Staff of the Winona General Hospital;

Whereas: We as members of these organizations have been privileged to enjoy his genial companionship, his keen professional judgment, and his strict adherence to the ethics of his profession;

Therefore: be it resolved that we, the members of the Winona County Medical Society and of the Staff

of the Winona General Hospital, deeply deplore his untimely death, occurring at the prime of his life and at the height of his usefulness; and that we feel we have lost a true friend and willing co-worker, and that the community has lost a good citizen and an able self sacrificing physician.

Be it further resolved that we express our sincere sympathy to the bereaved family and that these resolutions be inscribed on the minutes of the Winona County Medical Society and Staff of the Winona General Hospital and a copy be sent to the Winona Republican Herald.

Winona County Medical Society,  
Winona General Hospital Staff.

An obituary notice regarding Dr. Rosenberry was published in the March issue of MINNESOTA MEDICINE.

### Dr. Joseph G. Millspaugh

The general practice of medicine has attracted to its ranks many men of the highest type of character. Dr. Joseph G. Millspaugh as a well-trained student, a pioneer physician and a general practitioner was of this group.

He graduated from the University of Michigan in June 1876 and from Columbia University in 1877. His schooling he secured through his own efforts, as he was left an orphan at an early age.

The first six years of his professional life he spent in Battle Creek, Michigan. On account of failing health he moved to North Dakota and settled in Park River, where he soon found himself busy as a pioneer physician. He was active in the organization of the North Dakota State Medical Association and was elected its first president, serving in this capacity for three consecutive terms.

In 1891 he moved with his family to Minnesota and for the past thirty-five years he had been engaged in general practice in Little Falls, Minnesota. He was active in the building and development of St. Gabriel's Hospital in his home town. He held various offices in the medical societies of Minnesota. For ten years he was councilor of the Second District of the Minnesota State Medical Association and in this position his wise counsel was of great value to his colleagues.

He continued his work until December 1926, when, at the age of seventy-five, he locked his office, going west to spend the winter in Arcadia, California, with his son. His plan was to return to his work in the spring. This, however, was not to be. On January 30 he was stricken, and the following morning he died.

His was the life of the hard-working pioneer physician and general practitioner. His ideas on the subject of medical ethics and general conduct were high. He knew no compromise with wrong.

With his long years of practice and his high ideals, it is hard to imagine a more ideal life of honest, intelligent service.

ARTHUR W. IDE, M.D.

## OF GENERAL INTEREST

Dr. Samuel N. Litman, formerly of Meadowlands, Minn., is now located in Duluth.

Dr. R. J. McAdory has disposed of his practice at Vernon Center and has moved to Minneapolis.

Dr. H. DeBoer has been elected mayor for the village of Edgerton for the fifth consecutive time. He is also a member of the School Board.

Dr. T. C. Routley, of Toronto, General Secretary of the Canadian Medical Association, visited the Mayo Clinic during the first week of March.

Dr. B. T. Bottolfson, of Moorhead, was recently elected mayor of his city by a large majority. Dr. Bottolfson assumed his new duties March 1.

Dr. W. H. Goeckerman of the Mayo Clinic, Rochester, will spend the next two months visiting clinics in Italy, France, Germany, and England.

Dr. John Butler of Minneapolis has recovered from a serious illness which has incapacitated him for the past six months and has now resumed his practice.

One of the largest cancer clinics in the United States was opened in February at the University of Minnesota. Dr. Henry Michelson has been appointed director.

Dr. and Mrs. Charles D. Harrington of Minneapolis are now in the South for a month's trip which will include visits at Daytona Beach, Fla., Wilmington, S. C., and Washington, D. C.

Dr. George T. Baskett, superintendent of the State Hospital for the Insane at Willmar, Minnesota, has resigned to become superintendent of the Pennsylvania State Hospital at Wilkes Barre.

Dr. George H. Coons, of the University of Michigan, gave a Mayo Foundation lecture in Rochester on February 25. His subject was "Some applications of medical research methods to plant pathology."

Dr. H. J. Thornby of Moorhead will leave early in May for a two months' trip abroad. Dr. Thornby will attend the Post Graduate Clinic Assemblies of North American Physicians in various cities in Europe.

Dr. Walter J. Marclely has resigned from the General hospital staff, Minneapolis, in order to put in his full time at the United States Veterans' hospital. He has been in charge of tuberculosis work at the General hospital.

A bill has been introduced in the Illinois legislature providing for free medical examinations without treatment by a Board of Medical Examiners to be appointed by the Department of Public Health in municipalities with a population over 20,000.

Dr. A. J. Herbolzheimer, St. Paul, has been selected as air medical examiner for Minnesota by the United States department of commerce. It is planned by the department to have a physician in every town or city, where there is aeronautic activity, to examine pilots.

Dr. Alexander A. Maximow, Professor of Anatomy at the University of Chicago, gave a Mayo Foundation lecture in Rochester on the evening of March 8. His subject was "Some applications of the method of tissue culture to the solution of pathological problems."

The Webber Hospital in Duluth, which has been erected at a cost of \$200,000, will be ready for occupancy this month. The present staff includes Dr. E. E. Webber, Dr. H. S. Woodruff, Dr. Samuel Litman, Dr. Arnold Swenson, Dr. O. L. McHaffie and Dr. Paul Swenson.

Dr. S. Marx White of Minneapolis was recently elected second vice president of the American College of Surgeons at their annual meeting held in Cleveland in February. Dr. Charles Smithies of Chicago was elected president, with Dr. Charles Martin of Montreal as president-elect.

Dr. Alfred Owre, dean of the college of dentistry at the University of Minnesota since 1905, and a member of the dentistry faculty since 1893, will go to Columbia university July 1 to become dean of the school of dental and oral surgery in the new Columbia medical center in New York City.

Dr. A. Gullixson, Albert Lea, was elected president of the Freeborn County Medical Society at their annual meeting held in December 1926. Other officers elected were Dr. F. W. Calhoun, Albert Lea, vice president; Dr. P. M. Gamble, Albert Lea, secretary, and Dr. E. O. Vollum, Albert Lea, treasurer.

The American Hospital Association will hold its 1927 annual convention, October 10, in Minneapolis, it was recently announced. William F. Kunze of Minneapolis, president of the board of public welfare, has been appointed chairman of the Minneapolis citizens' committee in charge of convention arrangements.

The formal dedication of the new Fort Snelling Veterans Bureau hospital will be held April 19. The dedication address will be given by Frank T. Hines, director of the United States Veterans Bureau. Dr. H. B. Fralic, chief medical officer in charge of the hospital, is chairman of the dedication committee.

Dr. Horatio B. Sweetser, Sr., was recently elected president of the Minneapolis Surgical Society at their annual meeting. Dr. Sweetser succeeds Dr. Emil C. Robitshek. Dr. Willard D. White was elected vice president to succeed Dr. Stanley R. Maxeiner, and Dr. Theodore Sweetser was re-elected secretary-treasurer.

Dr. B. F. Smith, assistant superintendent of the St. Peter hospital for the insane for the last five years, has been appointed superintendent of the Willmar state asylum for the insane. He will succeed Dr. George T. Baskett, who recently took up his duties as superintendent of the hospital for the insane at Wilkesbarre, Pa.

Dr. W. B. Kelly of Aitkin was elected president of the Upper Mississippi Medical Society at the annual meeting held in Brainerd last month. Other officers are Dr. G. H. Garlock, Bemidji, first vice president;

Dr. F. W. Van Valkenburg, Long Prairie, second vice president; Dr. Mary Ghostley, International Falls, third vice president; Dr. G. I. Badeaux, Brainerd, secretary-treasurer.

The public welfare board, Minneapolis, has approved recommendations of Dr. Walter E. List, superintendent at General hospital, advancing Dr. M. Nathanson from assistant to associate on the medical staff. Additions to the hospital staff announced were Dr. Gerald Koepcke as assistant in the eye, ear, nose and throat department, and Dr. J. Polcak as assistant in obstetrics and gynecology.

The Minnesota Society of Internal Medicine offers \$250.00 cash for the best thesis received before January 1, 1928, by any "practicing physician, exclusive of members in this Society, in the State of Minnesota who has been deemed most worthy to receive a prize in research in clinical medicine." Information may be obtained by writing to the Secretary, Dr. E. L. Gardner, 610 Yeates Building, Minneapolis, Minn.

Dr. R. C. Logefeil of Minneapolis has returned from Europe, where he has been since last summer. Dr. Logefeil visited the various clinical centers on the continent as well as in England and the Scandinavian countries. He spent most of his time in Vienna, where he found post graduate work to be most thoroughly organized. He has resumed his practice at the Sivertsen Clinic in the department of internal medicine.

Dr. Karl W. Doege of Marshfield, Wis., was elected to succeed Dr. Arthur A. Law as president of the Soo Line surgeons at their eighteenth annual meeting held at the Radisson hotel, Minneapolis, Friday and Saturday, February 25 and 26. Dr. David J. Twohig of Fond du Lac, Wis., was elected vice president to succeed Dr. David V. Meiklejohn, also of Fond du Lac, and Dr. John H. Rishmiller, Minneapolis, was re-elected secretary-treasurer. Winnipeg was selected as the place of the next annual meeting.

"Demonstration of a method for taking repeated aortic blood pressure readings in laboratory animals" was the subject of a paper given before the Minnesota Pathological Society at their meeting Tuesday, February 15, by Dr. Leone McGregor. Dr. A. H. Pedersen read a paper on "Method of producing experimental chronic hypertension in the rabbit." Dr. Donald McCarthy reported a case of Henoch's purpura and Dr. M. H. Nathanson presented the subject "Electrocardiographic observations in diphtheria heart."

Word has been received that Dr. and Mrs. C. B. Buswell, formerly of Minneapolis, are among the missionary refugees who arrived safely in Shanghai recently. Dr. Buswell is a former resident of Minneapolis and a graduate of the medical school of the University of Minnesota. He has been a medical missionary at Kuling for the Presbyterian church for the last two years and has been in charge of the Presbyterian hospital. Kuling, situated in the mountains beyond the Yangtse river, is a summer resort for missionaries in central China.



## REPORTS AND ANNOUNCEMENTS OF SOCIETIES

### JOINT SOCIETY MEETING

Dr. Allen K. Krause, Director of Tuberculosis at Johns Hopkins University, will visit the Twin Cities and other points in the state this month at the invitation of the Medical Staff of the Lymanhurst hospital.



DR. KRAUSE

Dr. Krause is editor of the *American Review of Tuberculosis*; American editor of "Tubercle"; author of numerous books among which are "Rest and Other Things," "Environment and Resistance in Tuberculosis," "The Anatomical Structure of Tubercle From Histogenesis to Cavity." He is also author of a large number of articles which have appeared in various American and foreign medical journals.

On Monday evening, April 4, 1927, in the Ballroom of the Nicollet Hotel, Minneapolis, at 6:30 o'clock, Dr. Krause will be the orator of the evening at the annual banquet of the Lymanhurst Medical Staff which is being held in his honor. Among the different organizations cooperating with the Lymanhurst medical staff in giving this banquet are: the Hennepin County Medical Society, the Minnesota State Public Health Association, the Minnesota Trudeau Medical Society, and the Hennepin County Tuberculosis Association. Dr. Krause's subject, "The Trend of the Medical and Surgical Aspects in Pulmonary Tuberculosis," will be the outstanding address of his series.

Dr. Krause will also deliver the following addresses:

*Tuesday*, April 5, at 4:30 p. m. Address before the Graduate School, student-body and faculty, University of Minnesota, University campus.

*Tuesday*, April 5, 8:00 p. m. Annual address of the Alpha Omega Alpha—"Landmarks from Laennec to Trudeau," in the Anatomy amphitheater, University of Minnesota Medical School.

*Wednesday*, April 6, at 12:30 p. m. Address before the Open Forum of the St. Paul Association at the Saint Paul Athletic Club.

*Thursday*, April 7, at 8:00 p. m. Mayo Foundation lecture at Rochester, Minnesota.

*Friday*, April 8. Address before the Medical School student-body at the University of Minnesota.

*Saturday*, April 9. Address before various organizations in Duluth.

### SPECIAL TRAINS TO A. M. A. MEETING

The Illinois State Medical Society is running a special train to Washington, D. C., over the Pennsylvania Railroad for the A. M. A. meeting in May. The Illinois Society has extended an invitation to all physi-

cians in Minnesota, who will attend the convention, to make reservations on this special train, which will accommodate members of the profession from Illinois as well as the states north and west.

The following schedule will be effective on the dates specified:

### PENNSYLVANIA RAILROAD

Lv. Chicago	1:00 p. m.	May 15-16
Ar. Washington	9:00 a. m.	May 16-17

Additional special car service on the **LIBERTY LIMITED**, May 14th and 17th, and the **PENNSYLVANIA LIMITED**, May 14th, 15th, 16th and 17th.

<i>Liberty Limited</i>	<i>Pennsylvania Limited</i>
Lv. Chicago 1:00 p. m.	Lv. Chicago 5:30 p. m.
Ar. Washington 9:00 a. m.	Ar. Washington 4:20 p. m.

Address inquiries and reservation requests to Mr. W. E. Blachley, Division Passenger Agent, Room 524, Union Station, Chicago.

### STATE MEDICAL MEETING

Duluth, June 30, July 1, 2, 1927.

The Program Committee for the 1927 meeting of the Minnesota State Medical Association has announced a tentative program which includes such prominent speakers as—

Dr. I. A. Abt of Chicago.

Dr. P. M. Hickey, Professor of Roentgenology, University of Michigan.

Dr. J. O. Polak, Professor of Obstetrics and Gynecology, Long Island College Hospital.

Dr. M. L. Harris of Chicago.

Dr. F. D. Dickson of Kansas City.

Dr. Harry E. Mock of Chicago.

Dr. C. H. Mayo of Rochester.

Dr. Ralph H. Major of Kansas City.

Dr. W. S. Middleton of the University of Wisconsin.

The program will consist of joint meetings with papers and symposiums on—

Immunization and Acute Infectious Diseases,

Pulmonary Tuberculosis,

Gallbladder and Liver,

Gynecology,

Gastro-Intestinal Tract,

Heart.

Clinics will be held on—

The Circulatory System,

Neurological Diseases,

Skin Diseases,

Pediatrics,

X-ray Plates and

Internal medicine.

The Medical Economics Meeting will be of unusual interest as Dr. M. L. Harris of Chicago, for many years chairman of the A. M. A. Committee on Contract Practice, will be the principal speaker, with Miss B. C. Keller, Director of Lay Education of the Illinois State Medical Association, and Dr. H. M. Johnson, who will speak on Legislation.

## MINNEAPOLIS SURGICAL SOCIETY

The regular monthly meeting of the Minneapolis Surgical Society will be held Thursday, April 7, at 8:00 p. m., in the library of the Hennepin County Medical Society, Donaldson Building, Minneapolis. The following program will be presented:

1. Stones in the bile ducts, with report of a strange case—Dr. J. Frank Corbett.
2. Empyema, a series of cases with demonstration of method of treatment—Dr. James M. Hayes.
3. Acute suppurative appendicitis with some factors in mortality—Dr. Ivar Sivertsen.

Members of the medical profession are cordially invited to attend.

## WEST CENTRAL MINNESOTA MEDICAL SOCIETY

Members of the West Central Minnesota Medical Society met at Wheaton, February 19, 1927, when they were the guests of Dr. C. F. Ewing at a six o'clock dinner. The ladies were entertained at a basketball game while the doctors held their scientific program, which included the following papers:

Pneumonia in Children, Dr. C. M. Pierson, Wheaton.  
Cholecystitis, Dr. A. L. Lindberg, Wheaton.

Talk on Fee Bills, Dr. B. V. Bates, Browns Valley.

A general discussion followed the reading of the papers.

The next meeting will be held at Starbuck, Minn., April 30. At this meeting the Society will be the guests of Drs. C. R. Christenson, O. V. Opheim, L. L. Gibbon and H. Linde.

## STEARNS-BENTON COUNTY MEDICAL SOCIETY

Dinner at United States Veterans Hospital No. 101, St. Cloud, at which Dr. H. Hansen acted as host, opened the monthly meeting of the Stearns-Benton County Medical Society held February 23.

After the dinner hour the evening was devoted to the following program:

1. "Postoperative Insanity," Dr. C. B. Lewis, St. Cloud.  
Discussion, Dr. H. Hansen and Dr. Geo. Rice.
2. "Present Status of Scarlet Fever," W. B. Richards, St. Cloud.  
Discussion, Dr. H. Clark, St. Cloud.
3. "General Paresis," Dr. Geo. Rice, St. Cloud.  
Discussion, Dr. Blackmore.

Dr. I. J. Christison and Dr. F. J. Savage talked on the proposed basic Science Law.

## ALL BUSY

The mother was ill in a home where a radio had recently been installed. The doctor came and small Emily looked on wonderingly as he used the stethoscope. "What station is he trying to get, mother?" she asked, when she could no longer contain her curiosity. —Capper's Weekly.

## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of January 12, 1927.

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, January 12, 1927, at 8 p. m. Dinner was served at 7 p. m.

The meeting was called to order by the President, Dr. F. E. Burch. There were 32 members and 1 visitor present.

Dr. John F. Fulton read the following resolutions, written by Dr. Burch, upon the death of Dr. William R. Murray, which occurred on December 27, 1926:

"It is with sincerest regret and sorrow that I record for this Academy the death of one of our Fellows, Dr. William R. Murray.

"Although a comparatively recent fellow of the Minnesota Academy of Medicine, William Murray was a valued and interested participant in its monthly gatherings. Retiring and reticent by nature, he nevertheless loved his professional associations; when he came to this Academy, he enjoyed the social contacts as much as the scientific benefits which characterize our meetings. Silent by nature, he was a lovable companion and a man whom all esteemed.

"Dr. Murray always remained true to his professional ideals, which were of the highest. He commanded the respect of his associates, especially of those who practiced in his own special field, and of his colleagues at the University. Integrity, fairness in judgment of others, sincerity in his motives made us honor and admire him. As a consultant he was esteemed for his quiet, unobtrusive analysis of a problem; his advice was always sound, and tempered with conservative good judgment.

"His tragic death marks one of the unfortunate accidents of surgery. His premature passing means a distinct loss to the profession and to this Academy. Therefore, be it

"Resolved, That the Minnesota Academy of Medicine express to Mrs. Murray, and her sons and daughter, its appreciation of him as a colleague and Fellow of this Academy, our sincerest regret in the loss we share with them and our deepest sympathy in their hour of sorrow."

The scientific program of the evening consisted of two papers.

PROF. C. M. JACKSON gave a talk, which was illustrated with numerous lantern slides and charts, entitled "The Physique of Minnesota University Students—a Study in Constitutional Anatomy and Physiology."

## DISCUSSION

DR. A. SCHWYZER (St. Paul): I rise to thank Prof. Jackson for the paper he has brought before us. He compared the Scandinavian and German average and this brought back to my mind an article I read about 10 years ago in the Swiss Medical Journal, when the war was in full swing in Europe; an article by an an-

thropologist who tried to show that there was little reason to speak of a war of races against each other, and of the hatred of the *racés*. He showed that in Europe anthropology can make out three different races: First, a Northern European race—the "Reien-graebemensch"—i.e., the type which was found in the North where the bodies were buried in rows. Only in two districts could this race be found preserved today in a more or less clear type, i.e., in some southern parts of the Scandinavian peninsula and in some southwestern districts of England. They were outspokenly dolichocephalics, of a very tall build, long and heavy bones, light hair and blue eyes. Then comes the middle European type or *typus Alpinus*, very stocky, with strong bones, as in the former type, but of less height. In this race the heads were broad, which formed the most characteristic feature. The third type was the home mediterranean, with less height than the two others, considerably more slender bones and again long skulls. This author came to the conclusion that we could not talk of a real anthropological difference of races today when considering the different western European peoples, because they are so mixed. When you consider, for instance, that the Allemanns with strong heavy bones and dolichocephalic heads, which is the type of head of the northern European race, are the southernmost of the Germanic peoples, it becomes clear that the Germans as a whole are very mixed. The average German today is probably a mixture of the northern European type and the *typus Alpinus*. The Scandinavians, with the exception mentioned, are also mixed.

This coincides with what Prof. Jackson found in his studies, that there are very small anatomic differences between the two nationalities.

These studies are interesting. We have learned with interest tonight that the bodily well-developed fellows are usually correspondingly well-developed mentally.

DR. R. E. SCAMMON gave a lantern slide talk entitled, "The Growth History of the Human Heart."

#### DISCUSSION

DR. F. W. SCHLUTZ (Minneapolis): We all probably have the same impression about the work presented by the last speaker and the one preceding him. I marvel at the accurate and splendid analysis to which the subject has been put by both Dr. Scammon and Dr. Jackson. I doubt whether many of us realized that an anatomical subject could be so usefully applied to the clinical field of medicine. With just a little reflection one can readily see how easily this type of research can lend itself to investigation in the clinical field both in normal and abnormal states. This is not only true of children but is equally true of the adult. I don't think that anatomical data have generally been treated this way before. We are fortunate in having this type of work going on at the University of Minnesota. Most of us, I believe, had the feeling that research in anatomy had definite limitations. Dr. Scammon and Dr. Jackson have presented things which open up an entirely new and almost unexplored field that seemingly

offers exceptional opportunities for new research and establishes a mechanism by which many clinical phenomena can be accurately measured and more completely understood.

DR. FARR (Minneapolis): There was one point I wanted to ask Dr. Scammon. It occurred to me that the baby during the first month or so does not exercise very much and I wondered what effect this had on the growth of the heart; would that influence the slower growth at that time?

DR. SCAMMON: I do not think we have any direct evidence of that. The baby certainly exercises as much then as in utero and, as was shown in the charts, the upward turn of the curve comes just about the time that the body weight catches up to the proportionate heart weight.

THE PRESIDENT expressed the appreciation of the members of the Academy to Drs. Jackson and Scammon for presenting these very interesting studies.

The meeting adjourned.

CARL B. DRAKE, M.D.,  
Secretary.

## TRANSACTIONS OF THE MINNEAPOLIS SURGICAL SOCIETY

Meeting of February 3, 1927

The regular monthly meeting was called to order by Dr. E. C. Robitschek, President. In the absence of Dr. A. C. Strachauer, who had arranged the program, the clinical program was conducted by Dr. James A. Johnson. All the patients present were patients of the University Hospital and Cancer Institute.

A series of five cases of cancer of the rectum was presented by Dr. O. J. Campbell. Three of them had been treated by Dr. A. C. Strachauer by the Coffey method and were apparently well after periods up to about three years. The fourth case had just entered the hospital for operation, having an annular carcinoma of the rectum without any apparent extension into the surrounding tissues. The fifth case had refused colostomy and had been treated elsewhere about four years ago by proctectomy from below. He is now in the hospital, being treated with x-ray and radium for a recurrence. Colostomy has been performed of necessity. Dr. Campbell discussed the various types of operation for cancer of the rectum and reviewed the results of the Coffey operation as performed thus far at the University Hospital.

Dr. Owen Wangenstein reported a series of sixteen cases of goiter of various types and discussed the diagnosis, treatment and prognosis. The cases were very interestingly grouped and compared.

Dr. James A. Johnson presented a case of ossifying arthritis. The patient's trouble began in his knee in 1920; a diagnosis of tuberculosis was made and he was kept in a cast for six months. Later the cast was extended to include his spine when pain appeared there.

He has been in bed continuously since 1922 and was in a sanatorium in bed for three years. He has a complete bony ankylosis of both knees, both hip joints and his spine. Since coming here it is felt that tuberculosis is not the underlying cause and he has been treated by arthroplasty of first the right hip and then the left hip. The difficulties of postoperative treatment have been great on account of the other ankylosed joints but good progress has been made thus far.

A series of cases of cancer of the lip, mouth, and face was presented by Dr. James A. Johnson, the discussion covering the principles of treatment of the cancer and subsequent repair of the deformities, especially those left by the removal of a cancer of the antrum.

A series of cases of benign and malignant tumors of the breast was presented by Dr. Campbell, with a discussion of bilateral tumors of the breast and the differentiation between benign and malignant growths.

Two cases of undescended testicle were presented by Dr. Wangenstein with a discussion of the normal growth of the testicle from birth to puberty, a discussion of the technic preferred for operation, and an emphasis on the importance of performing the operation, if possible, before the age of puberty.

A short discussion of the principles of treatment with radium emanation and deep x-ray was given at the end of the meeting by Dr. William Senstrom, who thereafter demonstrated the preparation of radium emanation.

THEODORE H. SWEETSER, M.D.

As to how boldly or definitely we may speak of caseation clearing from x-ray plates, I am not prepared to say any more than that I am sure that we are yet capable of rendering a roentgenological verdict of caseation (in all its pathological stages) in all cases that are photographed. As one who is not a roentgenologist, I often wonder how the more expert can always be so sure that the shadows they may be observing are caseation and not pneumonia. I have an impression that, in tuberculosis at any rate, caseation and pneumonia can look very much alike to the x-ray. There can be no more common anatomic changes in pulmonary tuberculosis than pneumonic ones, of varying stage and extent. And I have an idea that many of these are frequently called the shadows of caseation. This is a point that we must ask for more information on. If the clinician and roentgenologist ask the pathologist for his opinion on the subject under discussion, he would therefore be inclined to reply that he should expect much—very much—tuberculosis of a pneumonic nature to gradually fade out of the picture, as well as perhaps some caseous pneumonia that had not advanced far, but that it would be difficult for him to conceive of a restoration to normal in lung tissue that had once been the site of caseation that had gone on to disintegration and loss of tissue. I am speaking now, as I have in this whole discussion, of grossly visible effects only. Allen K. Krause. *Trans. Am. Climatological and Chemical Assn.*, 40, 184 (1924).

## PROGRESS

Abstracts to be submitted to Section Supervisors.

Members are urged to abstract valuable articles which they run across in their reading and send the abstracts to the physicians in charge of the respective sections. In order to avoid duplication it would be well to communicate with one of the section supervisors before the article is abstracted.

## SURGERY

### SUPERVISORS:

DONALD K. BACON,  
LOWRY BLDG., ST. PAUL

VERNE C. HUNT,  
MAYO CLINIC, ROCHESTER

**ACUTE PANCREATITIS:** Digby Chamberlain. (*British Journal Surg.*, 1927, XIV, 390-396.) Acute pancreatitis is the most acute, agonizing, and one of the most fatal conditions which we are called upon to treat inside the abdomen. It is usually not diagnosed because the condition is not kept in mind. In regard to the symptoms, their severity and acuteness of onset should be emphasized. Two signs are of especial interest, first the marked cyanosis, and second, the discoloration in the flank due to a direct retroperitoneal digestion by the pancreatic ferments.

It is an uncommon disease, occurring once in about 5,000 surgical admissions. The average age in 21 cases reported was fifty; and the mortality was thirty-eight per cent. Thirteen cases were treated by drainage of the lesser sac; in five of these a tube was also placed in the gall-bladder and in these latter cases the mortality rate was considerably lower than in the former. The author suggests a method of posterior drainage by resecting a portion of the tenth rib on the left.

Some of the sequelæ observed in patients who have recovered are fistulæ, cysts and a certain amount of indigestion.

In four cases the bile was examined and in all of them a hemolytic streptococcus was present. No inflammation exists in the common ducts in these cases and after a consideration of the anatomy of the pancreatic and biliary ducts and their variations, the author concludes that, if the origin of the infection is in the gall-bladder, as he believes it to be, then it reaches the pancreas by way of the lymphatics. He concludes that the treatment is surgical and should include drainage of the gall-bladder in addition to drainage of the lesser sac.

HAROLD E. SIMON, M.D.



**TOTAL REMOVAL OF THE BLADDER FOR MALIGNANT TUMORS:** (Sur la question de l'ablation totale de la vessie dans les cas de tumeurs malignes) S. P. Fedoroff (Journ. D'urologie 1926, 22, 370-378). The treatment of bladder tumors, especially the malignant types, is rather unsatisfactory at present. There are a certain number of satisfactory results in any group of cases but these are lost sight of in the large group of patients who die a few months or a few years after operation.

The logical treatment in cancer of the bladder, as in cancer elsewhere, consists in the removal of the entire bladder as soon as possible after the onset of the disease. Cystectomy is neither a very complicated nor a very dangerous operation if one operates in two stages. The first stage consists of transplantation of the ureters and the second stage, several weeks later, consists in the removal of the bladder.

In eleven of the twelve cases reported by the author, the ureters were transplanted into the sigmoid. In one case they were transplanted into the anterior abdominal wall. Two patients died from pyelitis, one from peritonitis, two from accidental causes before the second stage of the operation was performed and two died as a result of generalization of the cancer. These were all advanced cases.

The most serious postoperative complication is pyelonephritis and this is especially to be feared when the ureters are transplanted into the intestines. However, this site is greatly to be preferred for the transplantation because of the convenience for the patient. Schmiden, in order to protect the kidneys from ascending pyelitis, proposes to isolate a segment of the large intestine and later transplant the ureters into it. One cannot judge the merits of such an operation until after many years of observation.

The second most common cause of death is recurrences and metastasis which may be avoided by earlier operations. The author believes that the more radical type of operation should be performed in the early cases, because resection of the tumor alone has not given satisfactory results. Certain difficulties present themselves, namely difficulty in diagnosis, even microscopically. Then the surgeon must decide whether to remove the tumor only or the entire bladder. However, there is, during the last year, not much doubt when any other abdominal organ is involved and the author favors cystectomy in all cases, because it offers greater freedom from recurrences. In his series the incidence of pyelonephritis is rather high even in the patients who recovered.

HAROLD E. SIMON, M.D.

**PLACENTA PRÆVIA—A STUDY OF 165 CASES:** Geo. L. Broadhead and Edwin G. Langrock. (Surg., Gyn. & Obst., Jan. 1927, XLIV, 39-42.) There are three types of placenta prævia: the central type, which covers the entire internal os at the time of full dilatation; the marginal type, in which the margin of the placenta is felt at the internal os when the cervix is incompletely dilated; and the lateral type, in which the edge of the placenta may be felt at the internal os,

when the cervix is completely or almost completely dilated.

When the cervix is incompletely dilated it is sometimes difficult to accurately diagnose these types.

The treatment depends upon a number of variable factors. When the cervix is sufficiently dilated to admit the hand, version is usually the best operation in both primiparæ and multiparæ with lateral or marginal placenta prævia. When there is little dilatation the modified Ribes bag is superior to packing. The forceps operation is used in any type of placenta prævia when the vertex is in the pelvis and the cervix is almost, if not fully, dilated. Manual dilatation of the cervix is a frequent cause of laceration and should be condemned.

In all primiparæ, at or near term, with central placenta prævia and undilated cervix, cæsarian section offers the best results. This is also true in multiparæ at term with central placenta prævia when the patient elects to take a slight additional risk to obtain a living child.

Debatable cases include patients pregnant from seven to nine months having a cervical dilatation of two to three fingers and who are in poor condition from loss of blood. The mortality is high in this group and cæsarian section may be the operation of choice.

Packing of the uterus and vagina with iodoform gauze and transfusions should be employed as adjuncts when indicated.

HAROLD E. SIMON, M.D.

**CONGENITAL HYPERTROPHIC PYLORIC STENOSIS:** Arthur C. Strachauer, Minneapolis, Minnesota. (Annals of Surgery, 1927, Vol. LXXXV, 67-72.) The pylorus of the normal infant is a soft pliable structure and the pyloric circular muscle up to three months of age measures not more than 2.5 mms. In congenital hypertrophic pyloric stenosis the pyloric region is occupied by a sharply defined tumor mass of unknown etiology, measuring from  $\frac{7}{8}$  to  $1\frac{1}{4}$  inches in length and from  $\frac{5}{8}$  to  $\frac{3}{4}$  of an inch in diameter. It is of a firm, almost cartilaginous consistency and is composed of a massive hypertrophy of the circular musculature of the pylorus. In these cases the pyloric canal becomes stenosed and the outlet of the stomach obstructed. The lesion has been observed in a seven months fetus and in the still-born, hence congenital.

As a result a striking clinical picture is presented, of explosive, projectile vomiting after each meal, the stools become absent or meconium-like; the urine becomes scanty, and dehydration and acidosis rapidly develop.

Because the liver is relatively large in infants the tumor is not palpable through the abdomen and even at operation can only be felt by hooking the finger up under the liver. The roentgen-ray examination has not been found helpful nor necessary.

In a series of 48 cases, all were males except two. The majority appeared well developed at birth, the symptoms beginning at the end of the second week and becoming alarming about the third week.

Adequate pre-operative preparation is absolutely essential to success and is especially urgent in the late cases. This consists in gastric lavage and the administration of fluids per rectum and under the skin.

Various types of operations have been practiced in the surgical treatment but the Rammstedt operation has become the standard and safest procedure. The operation is performed through a short upper right rectus incision, the tumor is delivered and a longitudinal incision is made through an avascular region down to and exposing the pearly white mucosa. A free portion of omentum is sutured to the upper margin of the region to prevent adhesions to the liver.

Careful attention is given to hemostasis, to reduction in the length of time consumed in the operation, and to keeping the child warm and carefully covered. The mortality rate in the series of 48 cases reported by the author was only two per cent.

HAROLD E. SIMON, M.D.

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## PEDIATRICS

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### SUPERVISORS:

CHESTER A. STEWART,  
LA SALLE BLDG., MINNEAPOLIS

ROY N. ANDREWS,  
MANKATO CLINIC, MANKATO

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**PROGRESS IN PEDIATRICS—HELIO THERAPY AND ACTINOTHERAPY IN RELATION TO PEDIATRICS:** Frederic W. Schlutz, M.D. (Amer. Jour. of Diseases of Children, January 1927.) Raczysky states: "It is the sun which plays the principal rôle in the etiology of rickets."

Huldschinsky states: "The therapeutic effect of quartz light irradiation is invariably apparent in all forms of rickets. Recovery results more promptly than with any of the methods employed heretofore. The effects of irradiation are lasting and the regenerative process is active for at least two months after interruption of the treatment."

Rats irradiated with the mercury-vapor quartz lamp grow at the normal rate for from four to five weeks after being placed on a diet deficient in the fat-soluble vitamin. Very slight or only temporary improvement is noted when rats which have ceased to grow as a result of fat-soluble vitamin deficiency are irradiated. Radiation is thus no substitute for the vitamin, but in some way economizes it in its action.

Before treating rickets with quartz lamp therapy, the inorganic phosphorus content of the blood serum was from 2.7 to 3.2 mg. per hundred cubic centimeters. These figures gradually increased to a maximum of 7 mg. under treatment.

The author concludes that the active rays are ultraviolet rays situated between 400 and about 280 millimicrons.

Orr, Holt, Wilkins and Boone (1923) carried out a series of metabolic studies on rachitic infants. These infants failed to retain calcium and phosphorus, although there was a sufficient amount in the diet. Under ultraviolet therapy the retention of these elements and the amounts of calcium and phosphorus found in the urine are increased, indicating an increased absorption from the intestine. They argue that defective absorption from the intestine in active rickets is the cause of the low calcium and phosphorus found in the blood serum. This is, then, the ultimate cause of the defective calcification of the bones.

Fisher (1923) states: "As a result of our investigation, we believe that in the management of rickets every known therapeutic agent should be made use of. The best results are obtained under a treatment combining proper food, cod liver oil and exposure to sunlight."

Armand-Delille (1923) considers sunlight the best preventive and curative measure for rickets.

Irradiated air has no therapeutic value in treating rickets in chickens. Steenbock and Nelson (1924) found that rats, fed a rickets-producing ration which had been irradiated, were definitely protected against rickets.

R. N. ANDREWS, M.D.

**CUTANEOUS ADMINISTRATION OF COD LIVER OIL:** Joseph Garland, M.D. (Amer. Jour. of Diseases of Children, December, 1926.) The value of cod liver oil in preventing and in curing rickets has been heralded with extreme enthusiasm during the past few years, and recent literature has been filled with reports of investigations concerning its action, and concerning its apparently close relationship to the action of ultraviolet irradiation. As might be expected, the interchangeability of cod liver oil and ultraviolet therapy has been overrated.

Infants receiving apparently sufficient doses of cod liver oil will develop rickets in almost as high a percentage of cases as will those not so treated. The value of the oil seems to be one of control rather than of prevention, the infants receiving it manifesting rickets healed earlier than the infants of the control series.

The oral administration of cod liver oil seems to have been the method almost exclusively employed. Soames, however, injected it intraperitoneally into rats and found that partial protection was afforded against the diet producing rickets. He concluded that the site of action of cod liver oil is not limited to the intestinal tract.

Since the importance of the skin as an independent organ of assimilation is becoming better recognized, it seemed logical to determine, if possible, whether or not the results commonly attributed to cod liver oil could be obtained by its cutaneous administration, namely, the raising of a lowered blood phosphorus concentration to its normal value.

Gauze pads, saturated with 1 tablespoonful of oil, were applied to the abdomens of these infants and were held in place with flannel binders. These pads were

renewed daily during the course of the experiments. The experiments had to do solely with the calcium and phosphorus plasma values.

Of eleven patients treated all but one showed a marked rise in the inorganic phosphorus in from two to three weeks of treatment. Of four untreated control cases, two showed a rise in the phosphorus to approximately the normal value within two weeks, and two, observed for twenty-seven and thirty-five days, respectively, showed no improvement in this respect.

The influence of cod liver oil on blood phosphorus concentration is still a matter of investigation and has not yet been thoroughly cleared up. If this influence is actual, it would seem that cod liver oil absorbed through the skin is capable of exerting it.

R. N. ANDREWS, M.D.

**DUODENAL ULCERS IN CHILDREN:** Lloyd B. Dickey, M.D. (Amer. Jour. of Diseases of Children, December, 1926.) From the cases reported in the literature, it is evident that epigastric pain is a common, if not the most common, symptom and complaint of peptic ulcer in children. Some abdominal discomfort is practically always present. The pains are usually, but not always, related to meals, and are relieved by food. Pains during the night are frequent.

Nausea and vomiting are common complaints. The most important single factor in the diagnosis is the realization that chronic peptic ulcer occurs in children. In those subjected to roentgenograms, lesions near the pylorus were noted.

All of the patients were remarkably relieved on a diet for patients with ulcer. If a careful investigation of chronic abdominal complaints in children is made, which included roentgenologic studies, it is probable that the incidence of chronic peptic ulcer in children will be found to be greater than has hitherto been believed, and that these patients may be easily relieved of rather distressing symptoms.

R. N. ANDREWS, M.D.

**TOYS AS PEDIATRIC ARMAMENTARIUM:** Jacob Sobel, M.D. (Archives of Pediatrics, January, 1927.) Dr. Parry was wont to say: "More important to know what kind of person has a disease than what kind of disease a person has."

The mere presence of toys in your office will often be the means, at least it has been so for the author, of being able to determine the conduct or behavioristic tendencies of the child.

Joco, the animated monkey, is used as an introduction to the child and to gain his attention. Smiling Jim is the author's standby for those children who will not open their mouths despite all pleading. He is made of rubber, and when asking him in the presence of the child, "Show me your tongue," you gently press laterally or anteroposteriorly and the tongue is protruded and little Willie is shown what a good and obedient boy Jim is.

Restless Ann is a weighted toy girl so adjusted that it will not remain in the horizontal position. Like many neurotic children she will not be kept down. The

author has used this toy often for this type of children to show them how to remain set and conserve their energy instead of butterfly fashion going from one place to the other—and it has worked. Dolls, of course, always appeal to the little girl.

Animals—dogs, cows, lions, tigers, elephants, horses, ducks, camels, etc.—always attract the child's attention. They serve the purpose mainly of entertainment, it is true, and of giving opportunity to converse with the child and in this way to gain his attention and quiet.

Inspection, almost a lost art in medicine today, is most helpful in childhood.

There is nothing more worth while in the whole field of child training than the formation of good habits. The pre-school age is the most plastic, most sensitive, and most impressionable period of life. Improper care at this time may mean a life of discomfort, non-resistance and disease.

R. N. ANDREWS, M.D.

## ROENTGENOLOGY

### SUPERVISORS:

LEO G. RIGLER,

MPLS. GEN'L HOSPITAL, MINNEAPOLIS

A. U. DESJARDINS,

MAYO CLINIC, ROCHESTER

**IRRADIATION OF VESICAL NEOPLASMS BY REMOVABLE PLATINUM RADON SEEDS: DESCRIPTION OF NEW INSTRUMENTS DESIGNED TO FACILITATE THEIR EMPLOYMENT:** Joseph Muir. (Jour. Urology, January, 1927, XVII, p. 53.) An improved method of treating neoplasms of the bladder by means of Removable Platinum Radon Seeds is described in this article.

Using the Removable Platinum Radon Seed it is possible to obtain scientific accuracy of the dosage delivered. Radiation is directed not only to the growth itself, but to the tissue surrounding it, in order to catch the mitotic cell. The placement of the radioactive units is made so that the "zones of potential tissue change" from each source do not overlap. The "zone of potential tissue change," or the amount of tissue that one seed can take care of when implanted alone and also when two or three centers are used so that intervening cells are subjected to cross firing, is described. The theoretical exposé has been proved by clinical results.

Using the Removable Platinum Radon Seed, not only are we able to deliver accurate dosage, but because of the platinum screenage all caustic rays are eliminated and necrosis and sloughing with intense shock to the patient obviated. The fact that Platinum Radon Seeds are easily removed through the cystoscope after the required amount of radiation has been delivered makes this the method of choice since no foreign body is left in tissue after treatment.

The technic of application is fully described and illustrated. A point of great importance in using the Re-

movable Platinum Radon Seeds is that after the first seed has been implanted through the cystoscope, its thread protruding from the portal of entry of the seed in tissue serves as a landmark and guide for the placement of successive seeds, so that the accuracy of placement of seeds through the cystoscope is greatly increased. Also, should a seed be incorrectly implanted, it may be removed and reimplanted.

In view of the highly simplified technic as described, the treatment of vesical neoplasms by implantation of Removable Platinum Radon Seeds can be accomplished with as much scientific accuracy as any other urologic procedure.

**RADIOLOGICAL EXPLORATION WITH IODIZED OIL:** Sicard & Forestier (Brit. J. of Radiology, July, 1926). The authors briefly discuss the history of iodized oil, the nature of the substance, its action and manner of elimination, and show how lipiodol has enlarged the field of roentgenological exploration. They have been able to explore with much practical benefit numerous spaces or cavities which could not be objectively explored before: bronchial tubes, epidural and subarachnoid spaces, cavities of cold abscesses. The shape of several organs may be traced with lipiodol, as shown by work with the uterine cavity and fallopian tubes, seminal vesicles and vas deferens, male urethra, and lachrymal ducts. Intravenous or intra-arterial injections are possible. The use of a dilution of lipiodol in olive oil, called light lipiodol, allows the exploration of the cerebral ventricles through lumbar puncture.

The use of the oil is considered to be quite harmless. Out of over 5,000 injections made by the authors, they have had no untoward complications.

WALTER H. UDE, M.D.

**ROENTGEN-RAY THERAPY IN ERYSIPELAS:** Platou and Rigler (Arch. Med., November 1926). The literature is briefly reviewed, and a representative group of cases treated by this method at the Minneapolis General Hospital is reported. Uniformly good results have been obtained. These cases all responded by a temperature drop to normal within 24 hours after the treatment, with a rapid amelioration of the local and systemic manifestations. The most effective dose was found to be that corresponding to a mild erythema produced through a filter of 2 mm. of aluminum, on a 7 inch spark gap setting. A comparison is made with the results obtained by other methods of treatment.

WALTER H. UDE, M.D.

**PRIMARY CHONDROMA OF THE LUNG:** Hickey and Simpson (Acta Radiologica—15: XII 1926). Two cases of primary chondroma of the lung are reported, with a roentgenological and pathological study. The literature is also reviewed and the data of thirty-eight similar cases from previous reports are presented.

These tumors have never been properly interpreted roentgenographically. The few cases so studied have

been diagnosed echinococcus cyst. They should be differentiated from the latter by the absence of clinical manifestations of taenia infestation, and by the lobular, nodular periphery and irregular calcification or ossification of the pulmonary chondromas.

These growths consist usually of many islands of cartilage, imbedded in a network of vascular connective tissue and adipose tissue. Most cases show calcification. The majority of the tumors were located just beneath the pleura, only six of them showing close association with the bronchi. Their origin is probably from displaced bronchial "anlagen," since histologically they contain all the elements which are found in normal bronchi, including calcified cartilage, connective and fat tissue, complex glandular structure, and some even show smooth muscle.

The differentiation from other forms of lung tumor is of practical importance because of the difference in treatment.

WALTER H. UDE, M.D.

## BOOK REVIEWS

### BOOKS RECEIVED FOR REVIEW

**THE TIRED CHILD.** Max Seham, M.D., Assistant Professor of Pediatrics, University of Minnesota, and Grete Seham, formerly Professor of Medical Chemistry, University of Minnesota. 342 pages. Illus. Cloth, 2.00. Philadelphia and London: J. B. Lippincott Company, 1926.

**PRACTICAL HELPS IN THE STUDY AND THE TREATMENT OF HEAD INJURIES.** Adolph M. Hanson, M.D., formerly neurosurgeon to Evacuation Hospital No. 8, American Expeditionary Forces. 91 illustrations. Price \$3.00. Boston: Richard G. Badger, Publisher, The Gorham Press. 1925.

In this monograph the author deals in considerable detail with the anatomy of the skull and nervous system. Some very practical aids in the diagnosis of trauma to the central nervous system are emphasized.

The subjects of skull fracture, repair of scalp lacerations and brain injury, including gunshot injury, are dealt with quite extensively.

The treatment of head injuries by the use of plastic surgery is dealt with in a general way only.

To the man doing industrial surgery, and to the general practitioner, this book contains many helpful suggestions.

**A PRACTICE OF PHYSIOTHERAPY.** C. M. Sampson, M.D. 620 pages. Illus. Cloth, \$10.00. St. Louis; C. V. Mosby Company, 1926.

Dr. Sampson has enlarged upon his original volume published by C. V. Mosby in 1923. This last book contains almost again as many illustrations. The chapters on diathermia and quartz light are enlarged and better illustrated. They are particularly instructive and interesting. On the whole, this volume is a definite improvement of the original and is well worth reading.



I still feel that it strikes a note of over-enthusiasm. In my experience the results obtained do not altogether measure up to the expectations one looks for after taking Dr. Sampson's course of lectures or reading his book. However, one interested in physiotherapy can obtain a great deal of help from this volume.

ALBERT E. FLAGSTAD, M.D.

**THE MEDICINE MAN.** E. C. Dudley, M.D., LL.D. 369 pages. Illus. \$3.50. New York: J H. Sears & Co.

This autobiography of a well known medical man, with fifty years of practice to his credit, ex-President of the American Gynecological Society and President Emeritus of Northwestern University Medical School, should have great interest for the medical reader but it does not quite fulfill the expectation. He says: "I can not tell those things which have been and are most vital to me in my personal and professional life. These things are too near me for that, and they involve other people." The result is a rather dry recital of his life, which makes one wish that he might have turned the narrative over to some colleague who would have included more personal details and who would not have been hampered by professional modesty. As it is, it fails to be either an inspiration to others traveling the same path or to give an intimate or vital picture of a man who has accomplished so much in one lifetime.

Two chapters stand out in bright relief from the rest of the book, the one on antiseptic surgery and the last one on "More Worlds to Conquer." The first gives a picture of surgery of a generation ago with surgeons operating in frock coats, ligatures looped in the assistant's buttonhole, in order to be easily accessible to the operator, bystanders' unwashed hands invited to palpate the abdomen, and successful recovery after an abdominal operation the exception rather than the rule. In the last chapter he gives an idea of the changes in the science of medicine within his time and briefly sketches the problems now before the medical man and says, "Now let medicine, fortified by science, make the conquest of the world." The book is well worth reading but fails to do justice to the brilliant and useful life and vivid personality which it attempts to portray.

MARGARET WARWICK, M.D.

**MUSCULAR CONTRACTION AND THE REFLEX CONTROL OF MOVEMENT.** J. F. Fulton, B.Sc., M.A., Ph.D. (Oxon). 644 pages. Price \$10.00. Baltimore: Williams & Wilkins Co., 1927.

This is an extensive and interesting account of this subject and should appeal to a wide variety of readers. It might be described as a critical review of the literature on muscle nerve and coordinated movement. As such it brings into readable and accessible form the work of Sherrington, Adrian, Lucas, Hartree, Hill, Lapique and others, including the author's own extensive contribution on the subject. The author distinguishes throughout what has been proven and what is yet hypothesis.

The book is divided into two parts. The first part is on the contraction of muscle caused by artificial stim-

uli. The different properties, innervation, etc., of muscle fibers are considered and such problems as the origin of the electrical response, the relation of mechanical to electrical response, summation, tetanus, etc., as well as the nature of the contractile process are well discussed. Most American readers will welcome the clear exposition of Lapique's work on chronaxia.

The second part of the work deals with the control of the nervous system on muscle. This section gives a careful analysis of such subjects as reflexes, inhibition, tonus, lengthening and shortening reaction, reciprocal innervation, and the influence of the cerebellum and higher centers on muscular movement. The chapter on tonus including the discussion of sympathetic innervation as well as Hunter and Royale's work, will be found interesting to many.

The book is well illustrated, many of the illustrations being from the author's own work. A very extensive bibliography will prove a valuable aid to many and also an appendix on apparatus and methods. If one could find any fault with the book it is that extremely little consideration is given to the chemical changes in muscle contraction. A chapter on this subject in which the problems were adequately discussed would be of interest to many.

F. H. SCOTT, M.D.

**DISEASES OF WOMEN.** Harry Sturgeon Crossen, M.D., F.A.C.S. 6th edition revised and enlarged. 1005 pages. Illus. Cloth, \$11.00. St. Louis: C. V. Mosby Co., 1926.

Emphasis throughout is upon diagnosis and treatment, both of which are considered in calculated detail. In progressing through the volume, one is greatly impressed by the indefatigability of the conscientious teacher who uses every artifice of the printer and artist so to guide the student's attention so he will miss no detail of diagnostic procedure. Thus, in palpation, as one of the diagnostic methods applied to abdominal examination, the student is directed to note tension, tenderness, mass, also fluctuation, fluid wave, fat wave, fetal movement, uterine contraction, and friction rub. Each of these items in turn is extensively elaborated: for example, of a mass in the abdomen one must consider its position, size, shape, consistency, tenderness, mobility and attachments. Graduates of recent years will readily recall this feature of Crossen's text by reason of a haunting rhythm in the almost metrical arrangement of the outline.

Diagnosis of the tubal patency by the pneumoperitoneum method is, of course, included. The more recent (1926) use of iodized oil in X-ray visualization of tubal and uterine cavities is clearly explained.

There is a detailed list of therapeutic measures and agents commonly used in gynecology, together with a discussion of the value, rationale, and dangers (if any) of each.

There is an excellent chapter on diseases of the external genitals and vagina—most useful in differential diagnosis, and as a guide in the treatment of the many diseases to which the parts are subject.

The reader will find the author's text in "Operative Gynecology" a valuable complement to the chapters on

relaxation of the pelvic floor, displacement of the uterus, etc. The author disagrees with an increasing number of writers when he says that "retrodisplacement, as met with in actual work, is rarely without symptoms referable directly or indirectly to it." He says, however, that if there are no symptoms, no treatment is needed.

The extensive recent literature on the use of heat in the treatment of chronic endocervicitis is felt by the author to be still on trial, and receives but slight consideration.

In the chapters on neoplasms, the clear arrangement of the text is an aid in the evaluation of treatment methods.

The chapter on "Pelvic Inflammation" is particularly good in dealing with treatment, which varies markedly according to the type and character and duration of the infection with its attendant reactions—local and general.

The chapter on ovarian tumors is marked by a clarity of expression which characterizes the whole volume.

There is a chapter on "Disturbances of Function" in which are included sterility, leucorrhea, sexual impotence, as well as the usual menstrual disturbances.

Ehrenfest contributes a valuable chapter on the "Internal Secretory Glands in Relation to Gynecology." The nature of the individual glands, and also their reciprocal action, is reviewed with a dispassionate calm that is refreshing to anyone who enjoys a reasonable consistency between known facts on the one hand and exuberant fancy on the other.

E. C. HARTLEY, M.D.

**THE TREATMENT OF FRACTURES, WITH NOTES UPON A FEW COMMON DISLOCATIONS.** Charles Locke Scudder, A.B., Ph.D., M.D., F.A.C.S., consulting surgeon to the Massachusetts General Hospital; formerly Assistant Professor of Surgery at the Harvard Medical School; Fellow American Surgical Association; Member of the American Society of Clinical Surgery. Price \$12. Philadelphia: Saunders, 1926.

In this most recent, the tenth edition, on the treatment of fractures, the author again presents to the profession what seems the most concise and complete monograph on this subject. The treatment of all fractures is taken up much as in his previous edition. A few of the so-called historical, but obsolete, methods have been omitted.

The author especially emphasizes the frequent use of x-ray, for a diagnosis and a guide in the progress of repair in fractures.

A special stress is placed on the first aid, and immediate treatment of all fractures.

Special subjects such as pathological fractures, bone repair, fractures of the mandible and the axilla, birth fractures, together with the subject of massage and anesthesia, are taken up by contributors who are specialists in these various fields.

The author has likewise added much to his previous contributions upon the operative treatment of fractures, and seems less conservative in his views on operative treatment than in his previous edition.

For the general surgeon, or the surgeon doing industrial work, this book is to be highly recommended.

E. A. REGNIER, M.D.

**FOR SALE**—Fracture bed attachable to usual bedstead. Has lift and is complete. Write Mrs. Emelie Seipel, 2324 East 37th Street, Minneapolis, Minn.

**WANTED**—By ethical dentist, 14 years' experience, location with medical clinic in one of the larger cities in Minnesota outside of St. Paul, Minneapolis or Duluth. Nine years' experience with x-ray; 12 years with gas and ether anesthesia. Address C-118, care MINNESOTA MEDICINE.

**FOR RENT**—Office, reception and examining rooms; Dale-Selby double car line. Two druggists, two dentists, no physicians. Reasonable. Dale 7748, St. Paul.

**WANTED**—Eye, ear, nose and throat man to become associated with a group of physicians. New clinical building. X-ray and clinical laboratories, fully equipped. Free office expense until established. Also, wanted—an assistant in general practice and surgery on salary. Address C-120, care MINNESOTA MEDICINE.

**WANTED**—Salaried appointments for Class A physicians in all branches of the medical profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan Ave., Chicago. Established 1896. Member The Chicago Association of Commerce.

**DOCTOR WANTED**—Scandinavian preferred. Good location. Reasonable rent. Share reception room with dentist. Write C. C. Gerber, 961 Arcade St., St. Paul, or telephone Tower 7340.

**PRACTICE FOR SALE**—A \$6,000.00 cash unopposed practice in town of 500 in Northern Minnesota in Park Region district. Large territory, churches, good school, fine roads, hospital facilities near by. Came here 15 months ago in debt, now going away to specialize. I dispense my own drugs. Am asking \$500.00 for drugs and office equipment. Address C-117, care MINNESOTA MEDICINE.

## CONSTITUTION AND BY-LAWS OF THE MINNESOTA STATE MEDICAL ASSOCIATION\*

Adopted in 1926 And As Amended To Date.

## CONSTITUTION

## ARTICLE I—NAME OF THE ASSOCIATION

The name and title of this organization shall be the Minnesota State Medical Association.

## ARTICLE II—PURPOSES OF THE ASSOCIATION

The purposes of this Association shall be to federate and bring into one compact organization the entire medical profession of the State of Minnesota and to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; TO PROMOTE PUBLIC HEALTH; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of state medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life.

## ARTICLE III—COMPONENT SOCIETIES

Component societies shall consist of those county and district medical societies which hold charters from this Association.

## ARTICLE IV—COMPOSITION OF THE ASSOCIATION

Section 1. This Association shall consist of Members, Delegates, EMERITUS MEMBERS, and Guests.

Sec. 2. Members. The Members of this Association shall be the members of the component county and district medical societies.

Sec. 3. Delegates. Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component societies in the House of Delegates of this Association.

Sec. 4. EMERITUS MEMBERS. EMERITUS MEMBERS SHALL BE THOSE MEMBERS OF COMPONENT, DISTRICT OR COUNTY MEDICAL SOCIETIES, WHO HAVE HELD SUCH MEMBERSHIP FOR A PERIOD OF 25 YEARS, AND HAVE REACHED THE AGE OF 60 YEARS, OR THROUGH PHYSICAL DISABILITY, ARE UNABLE TO ENGAGE IN ACTIVE PRACTICE, AND WHO, UPON THEIR OWN REQUEST TO THEIR DISTRICT OR COUNTY SOCIETY, SHALL HAVE BEEN DECLARED EMERITUS MEMBERS OF SUCH DISTRICT OR COUNTY SOCIETIES.

Sec. 5. Guests. Any distinguished physician not a resident of this state who is a member of his own State Association may become a guest during an Annual Session on invitation of the officers of this Association, and shall be accorded the privilege of participating in all of the scientific work for that Session.

## ARTICLE V—HOUSE OF DELEGATES

The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1) Delegates elected by the component county and dis-

trict societies, (2) the Councilors, (3) THE PRESIDENT, (4) THE PRESIDENT ELECT, and (5) ex-officio the Secretary AND TREASURER of this Association.

## ARTICLE VI—COUNCIL

The Council shall consist of the Councilors, the President, THE PRESIDENT ELECT, and ex-officio the Secretary and Treasurer. Besides its duties mentioned in the By-Laws, it shall constitute the Finance Committee of the House of Delegates. A majority of Councilors shall constitute a quorum.

## ARTICLE VII—SECTIONS AND DISTRICT SOCIETIES

The House of Delegates may provide for a division of the scientific work of the Association into appropriate Sections, and for the organization of such Councilors District Societies as will promote the best interests of the profession, such societies to be composed exclusively of members of component county and district societies.

DISTRICT COMPONENT SOCIETIES ARE HEREBY DEFINED AS AGGREGATIONS OF MEMBERS OF THIS ASSOCIATION LIVING IN SUCH SPARSELY SETTLED DISTRICTS AS TO MAKE THE ORGANIZATION OF INDIVIDUAL COUNTY MEDICAL SOCIETIES INADVISABLE.

## ARTICLE VIII—SESSIONS AND MEETINGS

Section 1. This Association shall hold an Annual Session, during which there shall be held General Meetings, which shall be open to all registered members and guests.

Sec. 2. The general time and place for holding each Annual Session shall be fixed by the House of Delegates, PROVIDED THAT THE EXACT DATE OF THE MEETING MAY BE FIXED BY THE COMMITTEE ON SCIENTIFIC ASSEMBLY.

## ARTICLE IX—OFFICERS

Section 1. The officers of this Association shall be a President, PRESIDENT ELECT, 2 VICE PRESIDENTS, a Secretary, a Treasurer and a COUNCILOR FOR EACH COUNCILOR DISTRICT.

Sec. 2. The officers, except the Councilors, shall be elected annually. The terms of the elected Councilors shall be for three years. All of these officers shall serve until their successors are elected and installed.

Sec. 3. The officers of this Association shall be elected by the House of Delegates at the second meeting of the House of Delegates at the Annual Session, but no Delegate shall be eligible to any office named in the preceding section, except that of Councilor, and no person shall be elected to any such office who is not in attendance upon that Annual Session, and who has not been a member of the Association for the past two years.

## ARTICLE X—FUNDS AND EXPENSES

Funds shall be raised by an equal per capita assessment of members. The amount of the assessment shall be fixed by the House of Delegates, but shall not exceed

\*All new material is in capitals.

the sum of FIFTEEN DOLLARS (\$15.00) per capita per annum except on a two-thirds vote of the Delegates present. Funds may also be raised from the Association's publications, by voluntary contributions, and in other manner approved by the House of Delegates. Funds may be appropriated by the House of Delegates to defray the expenses of the Association, for publications, and for such other purposes as will promote the welfare of the profession. All resolutions appropriating funds must be referred to the Finance Committee before action is taken thereon.

#### ARTICLE XI—REFERENDUM

Section 1. A General Meeting of the Association may, be a two-thirds vote of the members present, order a general referendum on any question pending before the House of Delegates, and when so ordered, the House of Delegates shall submit such question to the members of the Association, who may by mail or in person, and, if the members voting shall comprise a majority of all the members of the Association, a majority of such a vote shall determine the question and be binding on the House of Delegates.

Sec. 2. The House of Delegates may, by a two-thirds vote of its own members, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding on the House of Delegates.

#### ARTICLE XII—THE SEAL

The Association shall have a common Seal, with power to break, change or renew the same at pleasure.

#### ARTICLE XIII—AMENDMENTS

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the Delegates present at any Annual Session, provided that such amendment shall have been presented in open meeting at a previous session, and that it shall have been published twice during the year in the bulletin or journal of this Association, and sent officially to each component society at least two months before the meeting at which final action is to be taken.

### BY-LAWS

#### CHAPTER I—MEMBERSHIP

Section 1. The name of a physician on the properly certified roster of members of a component society, which has paid its annual assessment, shall be prima facie evidence of membership in this Association.

Sec. 2. Any person who is under sentence of suspension or expulsion from a component society, or whose name has been dropped from its roll of members, shall not be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take part in any of its proceedings until he has been relieved of such disability.

Sec. 3. EMERITUS AND VISITING MEMBERS OF COMPONENT DISTRICT OR COUNTY MEDICAL SOCIETIES SHALL HAVE ALL THE RIGHTS AND PRIVILEGES OF MEMBERS EXCEPT THOSE OF VOTING AND HOLDING OFFICE. THEY SHALL BE EXEMPT FROM ALL DUES AND ASSESSMENTS, EXCEPT THAT THEY SHALL NOT BE ENTITLED TO COPIES

OF MINNESOTA MEDICINE WITHOUT SUBSCRIPTION.

Sec. 4. Each member in attendance at the Annual Session shall have his name entered on the registration records indicating the component society of which he is a member. When his right to membership has been verified by reference to the roster of his society, he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that Session. No member shall take part in any of the proceedings of an Annual Session until he has complied with the provisions of the section.

#### CHAPTER II—TERMS OF OFFICE

TERMS OF OFFICE OF THE OFFICERS AND COMMITTEE MEN UNLESS OTHERWISE PROVIDED SHALL BE FOR A TERM OF ONE YEAR FROM JANUARY 1ST FOLLOWING DATE OF THEIR ELECTION.

#### CHAPTER III—ANNUAL AND SPECIAL SESSIONS OF THE ASSOCIATION

Section 1. The Association shall hold an Annual Session at such time and place as has been fixed at the preceding Annual Session by the House of Delegates, AND THE COMMITTEE ON SCIENTIFIC ASSEMBLY.

Sec. 2. Special meetings of either the Association or of the House of Delegates shall be called by the President on petition of twenty delegates OR fifty members.

#### CHAPTER IV—GENERAL MEETINGS

Section 1. All registered members may attend and participate in the proceedings and discussions of the General Meetings and of the Sections. The General Meetings shall be presided over by the President or by one of the Vice-Presidents, and before them shall be delivered the address of the President.

Sec. 2. The General Meeting may recommend to the House of Delegates the appointment of committees or commissions for investigation of special interest and importance to the profession and the public.

#### CHAPTER V—HOUSE OF DELEGATES

Section 1. The House of Delegates shall meet at 2 p. m. on the FIRST day of the Annual Session. It may adjourn from time to time as may be necessary to complete its business, provided, that its hours shall conflict as little as possible with the General Meetings. The order of business shall be arranged as a separate section of the program.

Sec. 2. Each component society shall be entitled to send to the House of Delegates each year one delegate for every fifty members, and one for each fraction thereof, but each component society which has made its annual report and paid its assessments as provided in this Constitution and By-Laws, shall be entitled to one delegate.

Sec. 3. Twenty delegates shall constitute a quorum.

Sec. 4. It shall, through its officers, Council and otherwise, give diligent attention to and foster the scientific work and spirit of the Association, and shall constantly study and strive to make each Annual Session a stepping-stone to future ones of higher interest.

Sec. 5. THE CHAIRMEN OF THE VARIOUS APPOINTED COMMITTEES AND THE DELE-



GATES TO THE AMERICAN MEDICAL ASSOCIATION MAY ATTEND THE REGULAR MEETINGS OF THE HOUSE OF DELEGATES BUT WITHOUT THE RIGHT TO VOTE. THE CHAIRMEN OF THE VARIOUS COMMITTEES MAY PARTICIPATE IN DEBATE ON THEIR OWN REPORTS.

Sec. 6. It shall consider and advise as to the material interest of the profession, and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public health legislation, and to diffuse popular information in relation thereto.

Sec. 7. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such county societies as already exist, and for organizing the profession in counties where societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse among physicians of the same locality, and shall continue these efforts until every physician in every county of the State who can be made reputable has been brought under medical society influence.

Sec. 8. It shall encourage post-graduate and research work, as well as home study, and shall endeavor to have the results utilized and intelligently discussed in the county AND DISTRICT societies.

Sec. 9. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body, AND AS IS HEREINAFTER PROVIDED.

Sec. 10. It shall, upon application, provide and issue charters to county OR DISTRICT societies organized to conform to this Constitution and By-Laws.

Sec. 11. In sparsely settled sections it shall have authority to organize the physicians of two or more counties into societies to be designated by hyphenating the names of two or more counties so as to distinguish them from district and other classes of societies, and these societies, when organized and chartered, shall be entitled to all the privileges and representation provided herein for county societies, until such counties may be organized separately.

Sec. 12. It shall divide the State into Councilor Districts, specifying what counties each district shall include, and, when the best interest of the Association and profession will be promoted thereby, organize in each a district medical society, and all members of component county societies, and no others, shall be members in such district societies.

Sec. 13. It shall have authority to appoint committees for special purposes from among members of the Association who are not members of the House of Delegates. Such committees shall report to the House of Delegates, and may be present and participate in the debate on their reports.

Sec. 14. It shall approve all memorials and resolutions issued in the name of the Association before the same shall become effective.

Sec. 15. A MEMBER OF THE STATE ASSOCIATION MUST BE A MEMBER OF SOME COM-

PONENT COUNTY OR DISTRICT SOCIETY AND CONVERSELY A MEMBER OF A COUNTY OR DISTRICT SOCIETY MUST BE A MEMBER OF THE STATE ASSOCIATION. AN ACTION OF THE HOUSE OF DELEGATES OR OF THE COUNCIL SHALL BE BINDING UPON ITS MEMBERS UNLESS OTHERWISE PROVIDED.

#### CHAPTER VI—ELECTION OF OFFICERS

Section 1. THE MANNER OF ELECTIONS SHALL BE DETERMINED BY THE ASSEMBLED HOUSE OF DELEGATES, and a majority of the votes cast shall be necessary to elect.

Sec. 2. The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes AT THE SECOND MEETING OF THE HOUSE OF DELEGATES.

Sec. 3. Any person known to have solicited votes for or sought any office within the gift of this Association shall be ineligible for any office for two years.

#### CHAPTER VII—DUTIES OF OFFICERS

Section 1. The President shall preside at all meetings of the Association and of the House of Delegates. HE shall appoint all committees not otherwise provided for. HE shall deliver an annual address and perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and, as far as practicable, shall visit by appointment the various sections of the State and assist the Councilors in building up the county societies, and in making their work more practical and useful.

Sec. 2. THE VICE PRESIDENTS SHALL ASSIST THE PRESIDENT IN THE DISCHARGE OF HIS DUTIES. IN THE EVENT OF THE PRESIDENT'S DEATH, RESIGNATION OR REMOVAL FROM THE STATE OR INABILITY TO FUNCTION, THE FIRST VICE PRESIDENT SHALL AUTOMATICALLY FUNCTION AS PRESIDENT.

Sec. 3. The Treasurer shall give bond in such sum as the Council may require. The Council shall execute said bond with some indemnity company at the expense of the Association. He shall demand and receive all funds due the Association together with the bequests and donations. He shall pay money out of the treasury only on a written order of the CHAIRMAN OF THE COUNCIL, countersigned by the Secretary OF THE ASSOCIATION; HE SHALL subject his accounts to such examinations as the House of Delegates may order, and he shall annually render an account of his doings and of the state of the funds in his hands. The amount of his salary shall be fixed by the Council. THE COUNCIL MAY AT ITS DISCRETION ALLOW THE SECRETARY A REVOLVING FUND OF SUCH MONEYS AS IT DEEMS ADVISABLE. THIS MONEY MAY BE EXPENDED BY THE SECRETARY FOR SUCH ADMINISTRATIVE PURPOSES AS HE DEEMS NECESSARY.

Sec. 4. The Secretary shall attend the General Meetings of the Association and the meetings of the House of Delegates, and shall keep minutes of their respective proceedings in separate record books. He shall be

ex-officio Secretary of the Council. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong to the Treasurer, and shall keep account of and promptly turn over to the Treasurer, all funds of the Association which come into his hands. He shall provide for the registration of the members and delegates at the Annual Sessions. He shall, with the coöperation of the secretaries of the component societies, keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his county OR DISTRICT society, and, on request, shall transmit a copy of this list to the American Medical Association. He shall aid the Councilors in the organization and improvement of the county OR DISTRICT societies and in the extension of the power and usefulness of this Association. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall employ such assistants as may be ordered by the COUNCIL, and shall make an annual report to the House of Delegates. He shall supply each component society with the necessary blanks for making their annual reports; shall keep an account with the component societies, charging against each society its assessment, collect the same, and at once turn it over to the Treasurer. Acting with the Committee on Scientific ASSEMBLY, he shall prepare and issue all Programs. The amount of his salary shall be fixed by Council. The Secretary shall present to the Association on the last day of the General Session, a summary of the proceedings of the Council and the House of Delegates.

#### CHAPTER VIII—COUNCIL

Section 1. THE COUNCIL SHALL HAVE FULL AUTHORITY AND POWER OF THE HOUSE OF DELEGATES BETWEEN ANNUAL SESSIONS, UNLESS THE HOUSE OF DELEGATES SHALL BE CALLED INTO SESSION AS PROVIDED IN THE CONSTITUTION AND BY-LAWS. IT SHALL CONSIST OF THE COUNCILORS AND THE PRESIDENT, AND THE PRESIDENT-ELECT AND EX-OFFICIO THE SECRETARY AND THE TREASURER OF THIS ASSOCIATION. A MAJORITY OF ITS MEMBERS SHALL CONSTITUTE A QUORUM.

Sec. 2. The Council shall meet on the FIRST day of the Annual Session and daily during the Session and at such other times as necessity may require, subject to the call of the chairman, or on petition of three Councilors. It shall meet on the last day of the Annual Session of the Association to organize and outline work for the ensuing year. It shall elect a chairman and a clerk, who, in the absence of the Secretary of the Association, shall keep a record of its proceedings. It shall, through its chairman, make an annual report to the House of Delegates.

Sec. 3. Each Councilor shall be organizer, peace-maker and censor for his district. He shall visit the counties in his district when necessary for the purpose of organizing component societies where none exist; for inquiring into the conditions of the profession, and for improving and increasing the zeal of

the county societies and their members. The necessary traveling expenses incurred by such Councilor in the line of the duties herein imposed may be allowed by the FINANCE COMMITTEE OF THE COUNCIL on a proper itemized statement, and each Councilor MAY receive as compensation a per diem of \$10.00 while engaged in making his official visits to the counties in his district, OR IN ATTENDANCE AT DULY AUTHORIZED SPECIAL MEETINGS OF THE COUNCIL, but this shall not be construed to include his expense in attending the Annual Session of the Association.

Sec. 4. The Council shall be the board of censors of the Association. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component societies, or this Association. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or component societies on which an appeal is taken from the decision of an individual Councilor, and its decision in all such matters be final.

Sec. 5. In sparsely settled sections it shall have authority to organize the physicians of two or more counties into societies, to be suitably designated so as to distinguish them from district societies, and these societies, when organized and chartered, shall be entitled to all rights and privileges provided for component societies until such counties shall be organized separately.

Sec. 6. The Council shall provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Association, and shall have authority to appoint an editor and such assistants as it deems necessary, FOR PUBLICATIONS OTHER THAN MINNESOTA MEDICINE. IT SHALL DETERMINE THE SALARIES OF ALL EMPLOYEES OF THIS ASSOCIATION. All money received by the Council and its agents, resulting from the discharge of the duties assigned to them, must be paid to the Treasurer of the Association. As the Finance Committee it shall annually SUPERVISE THE AUDITING OF the accounts of the Treasurer and Secretary and other agents of this Association and present a statement of the same in its annual report to the House of Delegates, which report shall also specify the character and cost of all the publications of the Association during the year, and the amount of all other property belonging to the Association under its control, with such suggestions as it may deem necessary. In the event of a vacancy in the office of the Secretary or the Treasurer, the Council shall fill the vacancy until the next annual election.

Sec. 7. IT MAY—AT ITS DISCRETION—EMPLOY EXPERT ASSISTANCE IN AUDITING THE VARIOUS RECORDS OF THE OFFICERS AND COMMITTEES OF THE ASSOCIATION.

Sec. 8. IT MAY—AT ITS DISCRETION—EMPLOY SUCH HELP AS IT MAY DEEM NECESSARY TO FACILITATE THE WORK OF THE ASSOCIATION.

Sec. 9. THE COUNCIL MAY AT ITS DISCRETION SPEND FOR THE PURPOSES FOR WHICH IT WAS CREATED, SUCH MONIES AS ARE IN THE EDUCATIONAL FUND.

Sec. 10. THE COUNCIL SHALL FILL ANY VACANCY NOT OTHERWISE PROVIDED FOR WHICH MAY OCCUR DURING THE INTERVAL BETWEEN ANNUAL MEETINGS OF THE HOUSE OF DELEGATES; THE APPOINTEE SHALL SERVE UNTIL HIS SUCCESSOR HAS BEEN ELECTED AND HAS QUALIFIED.

Sec. 11. THE COUNCIL SHALL NOMINATE AND PRESENT TO THE HOUSE OF DELEGATES A LIST OF NOMINATIONS FOR DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION TO BE VOTED UPON BY THE HOUSE OF DELEGATES. ADDITIONAL NOMINATIONS MAY BE MADE FROM THE FLOOR OF THE HOUSE OF DELEGATES.

#### CHAPTER IX—COMMITTEES

Section 1. The standing committees shall be as follows and appointed by the President unless otherwise provided.

A Committee on Scientific ASSEMBLY.

A Committee on Public Policy and Legislation.

A Committee on Necrology.

AN EDITING AND PUBLISHING COMMITTEE.

A COMMITTEE ON PUBLIC HEALTH EDUCATION.

A COMMITTEE ON RADIO BROADCASTING.

A Committee on Hospitals and Medical Education.

A Committee on Arrangements, and such other committees as may be necessary.

COMMITTEE ON SCIENTIFIC ASSEMBLY:—

IN ORDER TO FACILITATE THE WORK OF THE ASSOCIATION, ITS SCIENTIFIC WORK SHALL BE GROUPED UNDER TWO SECTIONS, TO BE DESIGNATED, 1ST SECTION OR MEDICINE, AND 2ND SECTION, SURGERY, UNDER WHICH SHALL BE GROUPED THE APPROPRIATE SUBDIVISIONS REPRESENTED BY THE SPECIAL BRANCHES OF MEDICINE AND SURGERY RESPECTIVELY. THE PRESIDENT SHALL APPOINT FOR EACH ANNUAL MEETING A CHAIRMAN AND SECRETARY FOR EACH SECTION. THE MEMBERSHIP OF THE COMMITTEE ON SCIENTIFIC ASSEMBLY SHALL CONSIST OF THE CHAIRMAN AND SECRETARY OF THE SECTIONS OF MEDICINE AND SURGERY, THE PRESIDENT, FIRST VICE-PRESIDENT, THE PRESIDENT-ELECT AND THE SECRETARY OF THE ASSOCIATION. THE PRESIDENT AND FIRST VICE-PRESIDENT SHALL ACT AS CHAIRMAN AND VICE-CHAIRMAN RESPECTIVELY. IT SHALL BE THE DUTY OF THE COMMITTEE TO ARRANGE FOR AN ATTRACTIVE AND INSTRUCTIVE SCIENTIFIC PROGRAM AT THE VARIOUS SESSIONS OF THE ENSUING MEETING OF THE ASSOCIATION. IT SHALL BE THE DUTY OF THE SECTION CHAIRMAN TO PRESIDE OVER THE MEETINGS OF THE RESPECTIVE SEC-

TIONS WHEN MEETING SEPARATELY AND ALTERNATELY WHEN THE PROGRAMS OF THE SECTIONS ARE COMBINED. THEY SHALL, FURTHERMORE, COOPERATE WITH THE RESPECTIVE SECTION SECRETARIES IN THE ARRANGEMENT OF THIS PROGRAM. THIS COMMITTEE SHALL COLLABORATE WITH THE COMMITTEE ON ARRANGEMENTS TO THE BEST INTERESTS OF THE ANNUAL MEETING.

Sec. 3. The Committee on Public Policy and Legislation shall consist of 5 members and the President and Secretary. Under the direction of the House of Delegates, it shall represent the Association in securing and enforcing legislation in the interest of public health and scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall strive to organize professional influence so as to promote the general good of the community in local, state and national affairs and elections.

Sec. 4. THE EDITING AND PUBLISHING COMMITTEE SHALL CONSIST OF 5 MEMBERS—APPOINTED SERIALLY BY THE PRESIDENT, 2 SHALL BE MEMBERS OF THE HENNEPIN COUNTY MEDICAL SOCIETY, 2 SHALL BE MEMBERS OF THE RAMSEY COUNTY MEDICAL SOCIETY, AND ONE SHALL BE A MEMBER OF SOME OTHER COUNTY MEDICAL SOCIETY,—EACH SHALL HOLD OFFICE FOR A PERIOD OF 5 YEARS. THE EDITING AND PUBLISHING COMMITTEE SHALL HAVE FULL RESPONSIBILITY AND CONTROL OF THE EDITING AND PUBLISHING OF MINNESOTA MEDICINE AND THE APPOINTMENT OF ITS EDITOR AND BUSINESS MANAGER AND SHALL DETERMINE THEIR COMPENSATION SUBJECT TO APPROVAL BY THE COUNCIL. THEY SHALL MAKE AN ANNUAL REPORT TO THE HOUSE OF DELEGATES.

THE STATE ASSOCIATION SHALL PAY THE EDITING AND PUBLISHING COMMITTEE THE SUM OF TWO DOLLARS PER YEAR PER MEMBER IN CONSIDERATION FOR WHICH EACH MEMBER OF THE ASSOCIATION SHALL RECEIVE A COPY OF THE JOURNAL FOR ONE YEAR.

AN ASSOCIATE EDITOR SHALL BE APPOINTED FOR EACH COUNCILOR DISTRICT, BY THE EDITING AND PUBLISHING COMMITTEE.

THE PROFITS DERIVED FROM THE PUBLICATION OF THE JOURNAL SHALL BE PAID INTO THE TREASURY OF THE STATE MEDICAL ASSOCIATION AND ANY DEFICIT ARISING FROM THE PUBLICATION OF THIS JOURNAL BE PAID FROM THE TREASURY OF THE ASSOCIATION.

Sec. 5. THE COMMITTEE ON PUBLIC HEALTH EDUCATION SHALL CONSIST OF 5 MEMBERS OR AS MANY MORE AS THE COUNCIL MAY DETERMINE. ITS FUNCTION SHALL



BE, FIRST, TO STRIVE TO DEVELOP AN INTELLIGENT PUBLIC VIEWPOINT TOWARD THE MEDICAL PROFESSION; SECOND, TO COOPERATE WITH THE VARIOUS AGENCIES THROUGHOUT THE STATE WHOSE FUNCTION IS THE PROMOTION OF PUBLIC HEALTH, AND WHOSE GOVERNING BODIES ARE COMPOSED IN WHOLE OR IN PART OF LAYMEN, SO THAT FROM A MEDICAL STANDPOINT THESE AGENCIES SHALL BE INTELLIGENTLY ADMINISTERED; THIRD, TO USE SUCH MEASURES THROUGHOUT THE STATE AS MAY BE NECESSARY TO ELIMINATE FRAUDULENT MEDICAL ADVERTISEMENTS FROM THE PUBLIC PRESS; FOURTH, TO AID AND ENCOURAGE EACH COMPONENT SOCIETY TO CONDUCT AT LEAST ONE ANNUAL PUBLIC MEDICAL MEETING; FIFTH, TO ENCOURAGE PUBLIC HEALTH EDUCATIONAL MATTERS THROUGH THE CHANNELS OF THE PUBLIC PRESS—RADIO—MOVIES AND THE LECTURE PLATFORM.

Sec. 6. THE RADIO BROADCASTING COMMITTEE SHALL CONSIST OF 5 MEMBERS. ITS FUNCTION SHALL BE TO SECURE PAPERS SUITABLE FOR RADIO BROADCASTING AND TO SECURE AS WIDE NEWSPAPER PUBLICITY FOR THESE PAPERS THROUGHOUT THE STATES AS MAY BE PRACTICABLE. THE NAMES OF THE WRITERS OF SUCH PAPERS SHALL NOT BE ANNOUNCED OVER THE RADIO OR IN THE PAPERS OR MAGAZINES IN WHICH THEY ARE PUBLISHED. THEY SHALL BE ANNOUNCED AND PUBLISHED AS BEING UNDER THE AUSPICES OF THE MINNESOTA STATE MEDICAL ASSOCIATION AND THE COUNTY SOCIETY OF WHICH THE WRITER IS A MEMBER TOGETHER WITH THE NAME OF THE CITY IN WHICH THE WRITER RESIDES.

Sec. 7. THE COMMITTEE ON HOSPITALS AND MEDICAL EDUCATION SHALL CONSIST OF FIVE MEMBERS. ITS FUNCTION SHALL BE:—

1. TO GIVE INFORMATION AND RECOMMENDATIONS, IF INDICATED, TO THE ASSOCIATION IN MATTERS PERTAINING TO MEDICAL EDUCATION IN THE STATE.

2. TO ENCOURAGE AND DEVELOP A COMPREHENSIVE PROGRAM FOR POST-GRADUATE INSTRUCTION, AND IN COOPERATION WITH THE FACULTY OF THE UNIVERSITY TO ARRANGE FOR SUCH COURSES TO BE GIVEN AT A MINIMUM OF EXPENSE AND LOSS OF TIME.

3. TO MAINTAIN JURISDICTION OVER THE STANDARDIZATION OF HOSPITALS WITHIN THE STATE AND IN COOPERATION WITH NATIONAL SOCIETIES WHO MAINTAIN BUREAUS OF STANDARDIZATION TO SEE THAT SUCH STANDARDS ARE MAINTAINED.

4. THE CHAIRMAN OF THIS COMMITTEE SHALL BE A REPRESENTATIVE OF THIS ASSOCIATION AT THE ANNUAL CONGRESS OF

MEDICAL EDUCATION AND MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS OF THE NATIONAL COMMITTEE.

Sec. 8. The Committee on Arrangements shall be appointed by the component society of the county in which the Annual Session is to be held. It shall provide suitable accommodations for the meeting places of the Association and of the House of Delegates, and of their respective committees, and shall have general charge of all the arrangements. Its chairman shall report an outline of the arrangements to the Secretary for publication in the program, and shall make additional announcements during the session as occasion may require. THE COMMITTEE ON ARRANGEMENTS SHALL COOPERATE WITH THE COMMITTEE ON SCIENTIFIC ASSEMBLY IN THE WORK OF SECURING AN ATTRACTIVE AND SUCCESSFUL PROGRAM FOR THE ANNUAL GENERAL SESSIONS OF THE ASSOCIATION.

#### CHAPTER X—COUNTY AND DISTRICT SOCIETIES

Section 1. All county AND DISTRICT societies now in affiliation with the Association or those which may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall, on application, receive a charter from and become a component part of this Association.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State in which no component society exists, and charters shall be issued thereto.

Sec. 3. Charters shall be issued only upon approval of the Council or the House of Delegates and shall be signed by the President and Secretary of this Association. The Council or the House of Delegates shall have the authority to revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Sec. 4. Only one component medical society shall be chartered in any county. Where more than one county society exists, friendly overtures and concessions shall be made, with the aid of the Council for the District, if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

Sec. 5. Each county and district society shall judge of the qualifications of its own members, but, as such societies are the only portals of this Association and to the American Medical Association, every reputable and legally registered physician who does not practice or claim to practice, nor lend his support to any exclusive system of medicine, shall be entitled to membership; provided, however, that certain physicians who occupy teaching or research positions in recognized medical schools and who do not wish to be licensed to practice medicine, may acquire honorary membership in the State and component societies. Before a charter is issued to any county or district society, full and ample notice and opportunity shall be given to



every such physician in the county to become a member.

Sec. 6. Any physician who may feel aggrieved by the action of the society of his county or district in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Council, and its decision shall be final.

Sec. 7. In hearing appeals the Council may admit oral or written evidence, as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a Board and as individual Councilors, in district and county work, efforts at conciliation and compromise shall precede all such hearings.

Sec. 8. A physician living on or near a county line may hold his membership in that county society most convenient for him to attend, on permission of the society under whose jurisdiction he resides.

Sec. 9. Each component society shall have general direction of the affairs of the profession in its county or district, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county or district; and systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it embraces every qualified physician in the county or district.

Sec. 10. At some meeting in advance of the Annual Session of this Association, each county or district society shall elect a delegate or delegates and an alternate or alternates to represent it in the House of Delegates of this Association, in the proportion of one delegate to each fifty members or fraction thereof, and the Secretary of the society shall send a list of such delegates to the Secretary of the Association 2 MONTHS BEFORE THE DATE FIXED FOR THE ANNUAL MEETING.

Sec. 11. The Secretary of each component society shall keep a roster of its members and of the non-affiliated registered physicians of the county or district, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. In keeping such roster the Secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county or district, and in making his annual report he

shall be certain to account for every physician who has lived in the county or district during the year.

Sec. 12. The Secretary of each component society shall forward the assessment of its members together with its roster of officers and members, list of delegates, and list of non-affiliated physicians of the county or district to the Secretary of this Association each year before December 31st.

Sec. 13. Each county or district society which fails to pay its assessment or make the report required, on or before December 31st, shall be held as suspended and none of its members or delegates shall be permitted to participate in any of the business or proceedings of the Association or of the House of Delegates until such requirements have been met.

Sec. 14. The ANNUAL per capita dues TO THE ASSOCIATION OF the members of the component societies shall be DETERMINED BY THE HOUSE OF DELEGATES AND shall be paid and forwarded as hereinbefore provided, BEING PAYABLE ON OR BEFORE JANUARY 1ST OF THE YEAR FOR WHICH THEY ARE LEVIED.

#### CHAPTER XI—MISCELLANEOUS

Section 1. THE TIME REQUIRED FOR DELIVERY OF ANY PAPER OR ADDRESS BEFORE THE ASSOCIATION SHALL BE LEFT TO THE DISCRETION OF THE PROGRAM COMMITTEE.

Sec. 2. All papers read before the Association or any of the Societies shall become its property. Each paper shall be deposited with the Secretary when read.

Sec. 3. The deliberations of this Association shall be governed by parliamentary usage as contained in Robert's Rules of Order, when not in conflict with this Constitution and By-Laws.

Sec. 4. The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

#### CHAPTER XII—AMENDMENTS

These By-Laws may be amended at any annual Session by a majority vote of all the delegates present at that session, after the amendment has lain on the table for one day. UPON THE ADOPTION OF THIS CONSTITUTION AND THESE BY-LAWS ALL PREVIOUS CONSTITUTIONS AND BY-LAWS ARE THEREBY REPEALED.

## MINNESOTA LICENTIATES, JANUARY, 1927

## MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

## LICENTIATES OF JANUARY, 1927

## BY EXAMINATION

NAME	MEDICAL COLLEGE	ADDRESS
Bailey, Richard Jesse	U. of Minn., M.B. 1926	Miller Hospital, St. Paul.
Barry, Gerald Williams	St. Louis U., Mo., M.D. 1926	St. Joseph's Hospital, Kansas City, Mo.
Brown, Henry Russell	U. of Minn., M.B. 1926	Miller Hospital, St. Paul.
Boies, Lawrence Randall	Columbia, M.D. 1926	New Asbury Hospital, Minneapolis.
Campbell, Orwood Jackson	Rush, M.D. 1923	University Hospital, Minneapolis.
Ehrlich, Sol Paul	U. of M., M.B. 1926	General Hospital, Minneapolis.
Exner, Frederick Blythe	U. of M., M.B. 1926	General Hospital, Minneapolis.
Fox, Ben	Wash. Univ., Mo., M.D. 1925	Mayo Clinic, Rochester.
Gardner, Walter Peter	U. of Minn., M.B. 1926	481 Iglehart, St. Paul.
Gibbons, Francis C.	U. of Minn., M.B. 1926	General Hospital, Minneapolis.
Grimes, Marian	U. of Minn., M.B. 1926	General Hospital, Minneapolis.
Guilbert, Gerald Didra	U. of Minn., M.B. 1926	St. Mary's Hospital, Duluth.
Hazeltine, Matthew Emery	Stanford, M.D. 1926	Mayo Clinic, Rochester.
Johnson, Eugene Ferdinand	U. of Minn., M.B. 1926	General Hospital, Minneapolis.
Kasper, Eugene Mitchell	U. of Minn., M.B. 1926	General Hospital, Minneapolis.
Kellum, Eugene LeRoy	U. of Pa., M.D. 1924	904 W. Center, Rochester.
Koop, Herman Early	U. of Minn., M.B. 1926	506½ E. 4th St., Duluth.
Koop, Severin Herman	U. of Minn., M.B. 1926	St. Mary's Hospital, Duluth.
Kumpf, Albert Ernest	U. of Minn., M.B. 1926	University Hospital, Minneapolis.
Larson, Lawrence Myrlin	U. of Minn., M.B. 1926	2610 Polk St. NE., Minneapolis.
Leonard, Gilbert John	U. of Minn., M.D. 1926	351 Ramsey, St. Paul.
Maeder, Edward Charles	U. of Minn., M.B. 1926	512 Delaware St. SE., Minneapolis.
Malerich, J. Anthony	U. of Minn., M.B. 1926	St. Mary's Hospital, Duluth.
Moriarty, Margaret Berenice	U. of Minn., M.B. 1926	University Hospital, Minneapolis.
Northey, Thornton McKee	U. of Minn., M.B. 1926	Northwestern Hospital, Minneapolis.
Page, Raymond Lester	U. of Minn., M.B. 1926	Swedish Hospital, Minneapolis.
Peterson, Carl Melancton	U. of Minn., M.B. 1926	St. Mary's Hospital, Duluth.
Richman, Samuel S.	U. of Minn., M.B. 1926	General Hospital, Minneapolis.
Ripple, Rudolph Joseph	U. of Minn., M.B. 1926	Miller Hospital, St. Paul.
Rohrer, Christian Albert	U. of Minn., M.B. 1926	4001 39th Ave. So., Minneapolis.
Rollie, Carl Olaf	U. of Minn., M.B. 1926	McClusky, N. D.
St. Cyr, Kenneth J.	U. of Minn., M.B. 1926	Robbinsdale, Minn.
Saint, James Harold	Durham, M.B. 1924	Mayo Clinic, Rochester.
Samson, Emmett Robert	U. of Minn., M.B. 1926	1919 2nd Ave. So., Minneapolis.
Scherer, Roland Gustav	U. of Minn., M.B. 1926	Swedish Hospital, Minneapolis.
Sherrill, Walter Paul	Cornell, M.D. 1925	Mayo Clinic, Rochester.
Smith, Leonard Marshall	Northwestern, M.D. 1926	Mayo Clinic, Rochester.
Smith, Wm. Marshall	Northwestern, M.D. 1926	Mayo Clinic, Rochester.
Stelter, Lloyd Albert	U. of Minn., M.B. 1926	3909 Aldrich Ave. So., Minneapolis.
Stryker, Wm. Byrd	U. of Minn., M.B. 1926	University of Minnesota Medical School.
Thabes, John Alois	U. of Minn., M.B. 1926	Brainerd, Minn.
Thompson, Gershon Jos.	Wash. Univ., Mo., M.D. 1925	Mayo Clinic, Rochester.
Tinkess, Donald Ewing	McGill, M.D. 1925	Mayo Clinic, Rochester.
Watson, Sidney James	U. of Minn., M.B. 1926	General Hospital, Minneapolis.
Winther, Nora M. C.	U. of Minn., M.B. 1926	University Hospital, Minneapolis.

## BY RECIPROCITY

Binger, Melvin Wm.	U. of Neb., M.D. 1926	Mayo Clinic, Rochester.
Brunsting, Louis Albert	U. of Mich., M.D. 1924	Mayo Clinic, Rochester.
Brown, Clarence Baxter	Rush, M.D. 1925	Mayo Clinic, Rochester.
Eubanks, Geo. Foster, Jr.	Emory, M.D. 1925	Mayo Clinic, Rochester.
Fleishman, Max	U. of Neb., M.D. 1924	Worthington, Minn.
Good, Louis Porter	Johns Hopkins, M.D. 1924	Mayo Clinic, Rochester.
Good, Ralph Wm.	U. of Cin. Coll. Med., M.D. 1924	Mayo Clinic, Rochester.
Humiston, Homer Wheeler	Harvard, M.D. 1925	849 1st SW., Rochester.
Kolars, James Joseph	Creighton, M.D. 1926	St. Mary's Hospital, Minneapolis.
Light, Samuel Emlin	U. of Neb., M.D. 1925	N. P. B. A. Hospital, St. Paul.
Martinson, Carl Jerome	Col. Med. Evang. Cal., M.D. 1925	Wayzata, Minn.
Mayne, Roy Malone	U. of Ia., M.D. 1921	Fidelity Building, Duluth.
Metheny, David	Jefferson, M.D. 1923	Rochester, Minn.
Miksch, Henry Fred	U. of Pa., M.D. 1923	1829 5th Ave. So., Minneapolis.
Miller, Chas. Duane	Ohio State U., M.D. 1921	Mayo Clinic, Rochester.
Norton, Donald Martin	Marquette, M.D. 1926	Mayo Clinic, Rochester.
Norton, Manville Wm.	U. of Mich., M.D. 1924	Mayo Clinic, Rochester.
Perry, Clarence Larimore	Ohio State U., M.D. 1924	Mayo Clinic, Rochester.
Rosenberg, Geo. Clifford	Loyola, M.D. 1926	2728 Humboldt Ave. So., Minneapolis.
Slattery, Peter A.	Creighton, M.D. 1908	Mound, Minn.
Thomas, Lester Chalmers	Northwestern, M.D. 1926	810 1st St. SW., Rochester.
Wright, Wm. Cale	U. of Mich., M.D. 1924	Mayo Clinic, Rochester.

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